# Global Trust MSC Pre-Assessment Report

## Louisiana State

American Oyster (*Crassostrea virginica*)

Dredge, Scraper and Tong Fishery

Louisiana State Waters

**FAO 31**

Managed by the Louisiana Department of Wildlife and Fisheries

Submitted March 2011

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## Executive Summary

The Louisiana State American Oyster (*Crassostrea virginica*) fishery caught by Dredge, Scraper and Tong Fishery, managed by the Louisiana Department of Wildlife and Fisheries/ Louisiana Seafood Promotion & Marketing Board and within the State's 3 nm jurisdiction; has been pre-assessed to the Marine Stewardship Council's Standard for Sustainable Fisheries.

This report follows the requirements for conducting an MSC pre-assessment. It identifies the fishery strengths and the potential unit or units for certification. Of course, the report also identifies challenges or obstacles that the fishery may face during a more rigorous and publicly transparent MSC full assessment process. This preliminary assessment uses all reasonably available information and culminates with a recommendation as to the current suitability of the fishery to enter full assessment. It must be stressed that the results are indicative only and only through a full assessment would absolute confirmation of these indications be known. However, the report does provide a strong indication of the potential obstacles, gaps and the strengths that are features of the fishery at this time with respect to meeting the MSC Standard.

On the basis of the information reviewed by our professional assessment team, Global Trust would not recommend that the fishery proceed directly to full MSC assessment at this time. There are a number of obstacles in the management system and key information gaps that would create a substantial challenge for the fishery to meet the required minimum aggregate score of 80% for certification purposes. It should be clearly stated though that obstacles and challenges to the MSC full assessment does not mean the fishery is unsustainable. It simply means that information peculiar to the MSC program is currently not available to allow assessment of the fishery, according to the specific clauses and performance indicators contained within the MSC assessment methodology.

The first part of the report provides an overview of the fishery. It includes: short description; geographic location; history; current operation and management systems in place in the fishery and; and, the biology of the target species. The second part of the report is focused on MSC issues, scoring processes and recommendations. It is in tabular format and provides the specific rationales (as understood at this preliminary stage) for the potential scores on each Performance Indicator (PI) used in the MSC assessment process. There are seven performance indicators under Principle 1 (the stock), fifteen under Principle 2 (the ecosystem), and nine under Principle 3 (the management system).

Specific outcomes are documented in the main body of the report and tables are documented within the second part of the report. A summary of these are presented here:

- There is insufficient information to adequately score most of the performance indicators (PI's) under Principle 1 due to the absence of management elected biological reference points or proxies for the stock. Most of Principle 1 PI's relate to the stock status and the appropriateness of the harvest strategy in relation to the stock as measured by such reference points through time (typically 3 to 5 years). Their absence makes it extremely difficult to demonstrate that the fishery is managed according to Maximum Sustainable Yield (MSY) or with a precautionary approach. While there are seasonal restrictions on fishing, there is no catch quota, and fishing on public grounds is open access. There are adequate annual stock assessments that summarize both landings and estimated stock size

in terms of seed and sack or market size oysters, but there these data have not been used to estimate exploitation rates/stock abundance, nor have the data been used to establish biological reference points for fisheries management.

The use of the Risk Based Framework may be more appropriate for this fishery to score and evaluate Performance Indicators that are data deficient such as due to the lack of the biological reference points. This would require further consideration by an expert team on entering a full MSC assessment.

- The greatest challenge to the Principal 2 assessment is caused by insufficient data in the format required for MSC purposes. It may be likely that analyses of trip ticket data may be made available and this may result in favourable scores for some of the PI's under Principle 2. For bycatch there is insufficient data on by-catch species by quantity and by gear type; and there are no regulations in place that manage these activities. However, anecdotal information suggests that this single target species fishery retains little bycatch of other organisms. Additional information on the incidental by-catch species types and their quantities for each gear type as provided through observer programs for example, may provide substantiation for these PI's for scoring purposes. For Endangered Threatened or Protected (ETP) species assessment, there would appear to be insufficient objective information available at this time for adequate evaluation of this PI. Therefore, it is likely that the fishery will have difficulty passing this PI. This fishery targets only the Oyster resource and is considered to have a low impact on bycatch species, with small amounts of blue crab and demersal finfish caught. There is, however, no documented evidence to substantiate these observations and a determination with regards to this PI cannot be made without this information. For Habitat and Ecosystem PI's, there are no recent data, analyses or reports available regarding the impact of the Louisiana oyster fishery on the habitat. The habitats fished (oyster bars/reefs) are highly diverse and are considered as high value ecosystems. Oyster fishing gear has an impact on these ecosystems not only by disturbing the substrate physically, but also by removing the natural shell material and the seed/market sized oysters. The loss of shell material reduces reef elevation and the overall quality of the reef system which may reduce stock abundance. Documented, objective evidence to assess these activities and to assess the status of the reefs is not available to the assessment team at this time. Regulations are also not in place to manage the removal of clutch material from these systems. There are also potential natural, anthropogenic and environmental effects on the fishery habitat that would need to be considered, e.g., oil spills, coastal degradation, hurricanes and salinity fluctuations.

- Principle 3's Performance Indicators (PI's) evaluates the overall management system of the oyster fishery under pre-assessment. The overall legal and government framework supporting the Louisiana fishery management system should be capable of delivering the requirements necessary to meet the PI's concerning the overall fishery management framework. However, there are potential challenges with regard to the MSC Principles and Criteria in that the system does not overtly appear to utilize the types of fish stock, habitat and ecosystem management approaches that are highly prescribed by the MSC assessment process. A specific fishery management plan for state waters does not appear to be available and clear long-term fishery management objectives have not been developed. The fishery is currently managed under indirect effort control measures such as season closure, private leases, carapace size limits, and gear specifications; and, the precautionary approach has not been implemented in current management plans. Also, the extent that relevant research,

monitoring, evaluation and consultation occurs, to identify serious problems that the management and decision-making systems should respond to is unclear.

However, Louisiana has a well developed and established system to collect annual data on the oyster resource and the status of the stock from landings is evaluated annually (2001 to 2010) using fishery dependent and independent data. There is also an effective enforcement system in place for the fishery and no signs of poor compliance with the existing regulatory system.

Therefore, the recommendation from Global Trust is not to proceed to full assessment until there is clarification, assured availability and analysis of the required information and data for each of the PI's of the MSC scoring system.

## 1. Introduction

This Pre-assessment was conducted to determine if there were any obstacles to the client group's proposed Unit of Certification, 'The Louisiana State Oyster' fishery within the 3nm jurisdiction under the management authority of the Louisiana Department of Wildlife and Fisheries (LDW&F) proceeding to a full MSC assessment. This pre-assessment report is a guidance document only and may differ from the outcome of a more rigorous MSC Full Assessment through full consultation with stakeholders in the fishery and through a complete assessment process.

- Site visits with the client were undertaking from the 8th to the 10th November 2010 by Global Trust Certification Ltd representative Mike Rose and expert assessor Eric Dunne in Baton Rouge, Louisiana with representatives of the LDW&F. Global Trust advisors, Joe DeAlteris and Eric Dunne, are independent responsible and fully qualified to assess this fishery. This pre-assessment was conducted in accordance with the guidelines contained in the MSC Fisheries Assessment Methodology v2, MSC Principles and Criteria for Sustainable Fishing, MSC Fisheries Certification Methodology Version 6.1, Policy Advisory 15 v 1, Policy Advisory 11 v 1 and TAB Directive D-003 v1.

- The information used in this pre-assessment included publicly available material from a range of sources, including official websites**.** Other sources of information include published books and peer-reviewed scientific papers. The information sources used in this pre-assessment will be recorded throughout the report.

Main websites accessed:

*Marine Stewardship Council* www.msc.org

*Louisiana Seafood and Marketing Promotion Board* www.louisianaseafood.com

*Louisiana Department of Wildlife and Fisheries* http://www.wlf.louisiana.gov

*Gulf States Marine Fisheries Division* http://www.gsmfc.org/#:links@1

## 2. Name of the Fishery

The Fishery under assessment is the Louisiana State American Oyster (*Crassostrea virginica*) fishery caught by Dredge, Scraper and Tong Fishery in Louisiana State Waters in FAO 31. The Fishery is managed by the LDW&F. The term 'Oyster' has been used to describe the American Oyster (*Crassostrea virginica*) throughout this report.

## 3. Species Common Name(s)

Common names for this species are:

American Oyster, Common Oyster, and Eastern Oyster

## 4. Species Latin Name:

The Latin name for this species is *Crassostrea virginica.*

## 5. Method of Catch[1]

The fishery is managed through a combination of open access on public grounds and private lease arrangements for other areas (there are currently moratorium on new leases and on new Oyster Seed Ground Vessel Permits). While fishery and gear licences are required and seasonal fishing restrictions exists, there is no catch quota. There is a minimum size for oyster caught on public grounds and on the number of dredges per vessel. Public oyster grounds are used as a source of seed oysters (less than 3 inches from hinge to mouth) which are transplanted to private leased grounds. A leasee of private oyster grounds may take undersized oysters from public grounds used for bedding purposes only. Size restrictions and volume restrictions do not apply to oysters commercially harvested from a private lease.

Oysters are harvested from public grounds by dredges, scrapers and tongs. A seed oystering dredge is similar to a large curved metal rake with a basket on the end, which is used to collect oysters. The dredge is constructed with a blade that is placed at a fixed angle and acts to gather the oysters from the bottom. Blade design falls into two categories, *scrapers* ("no teeth") or *toothed* blades. Scraper blades are usually constructed with 12" steel and with a small taper cut on the bottom face. Both blades are similar but the toothed blade will almost be cleaner than a scraper blade. A toothed blade is installed so that as the angle of the frame relative to the bottom is altered at an optimum angle at which the teeth will penetrate the bottom. Dredges and scrapers are limited to less than six feet wide as measured along the tooth bar. The dredge teeth are restricted to a length less than five inches. There is a restriction of seven dredges in use per vessel to avoid disturbance to and removal

[1] Louisiana Commercial Fishing Regulations 2011
http://www.wlf.louisiana.gov/sites/default/files/pdf/publication/31745-commercial-fishing-regulations/commercial_fishing_2011.pdf

of excessive, non-living reef material (substrate) with seed oyster loads or to avoid physical destruction to the natural reefs. There are also restrictions on dredges in certain areas such as in Calcasieu and Sabine Lake where vessels are limited to a single hand dredge or a single scraper with mechanical assistance and also with a tooth or flat bar of no more that 36 inches in length.

Commercial fishermen harvesting or possessing oysters in state waters must purchase an oyster harvester license, in addition to any and all licenses otherwise required. Commercial fisherman harvesting oysters from the public oyster seed grounds or reservations, except those grounds of Calcasieu and Sabine Lakes, are required to possess a valid Public Oyster Seed Ground Vessel Permit. Culling oysters and discarding the undersized oysters or dead shell is allowable on the open designated public grounds or on private leases but not permitted in closed areas. Oyster harvesting can only start a half hour before sunrise and must cease a half hour past sunset. Containers used to store and hold oysters must be tagged with an LDW&F tag.

Cultch in the form of a hard substrate such as shell is planted on the oyster grounds. Habitat modification occurs by adding cultch such as oyster shells where there is no natural reef or where existing reefs need restoration. Substrate type is the main criterion for selecting a lease site and good sites are generally identified by naturally occurring oyster shells or reefs; identified with a cane or metal pole to sound the bottom to determine firmness, or hydro-acoustics, side-scan sonar or scuba divers. Planktonic oyster larvae will attach on this substrate and the resulting small oyster spat (<1 inch) grow to seed size (>1 inch) and may be transplanted to private leases where they are grown to market size (>3 inches). In Louisiana, some areas of the public oyster grounds are managed (not exclusively) for seed production. Planting cultch during spawning when larvae are settling promotes a natural biofilm to develop on the substrate which deters bio-fouling of other organisms that compete for habitat and food.

In Louisiana, oyster vessels termed “luggers” generally are the main type of boat used for oyster harvesting. The boats generally have a shallow-draft hull made of wood, steel or aluminium and are 50 to 60 feet long, 18 to 22 feet wide, powered by a diesel engine. The upper edge of the top of the boats are fitted with: removable containers to hold large volumes of oysters on deck; water cannons to spray the seed oysters overboard; and, possibly two oyster dredges that are fished simultaneously on each side of the vessel and that are winched aboard and then emptied. The dredges may be emptied by hand onto a table - may have self-opening bags - and are deployed and retrieved with hydraulic A-frames to reduce the need for deckhands.

The seeds are planted by circling the lease while spraying the oysters overboard. Oyster seed in high saline leases can grow rapidly and can reach market size within 6 to 9 months. Salinities may inhibit (<10 parts ppt) spawning reducing spat settling. Many private oyster lease sites attract natural oyster production so that no seed planting is necessary.

**Figure 1 Oyster vessel or lugger (A) towing a typical oyster dredge (B)**

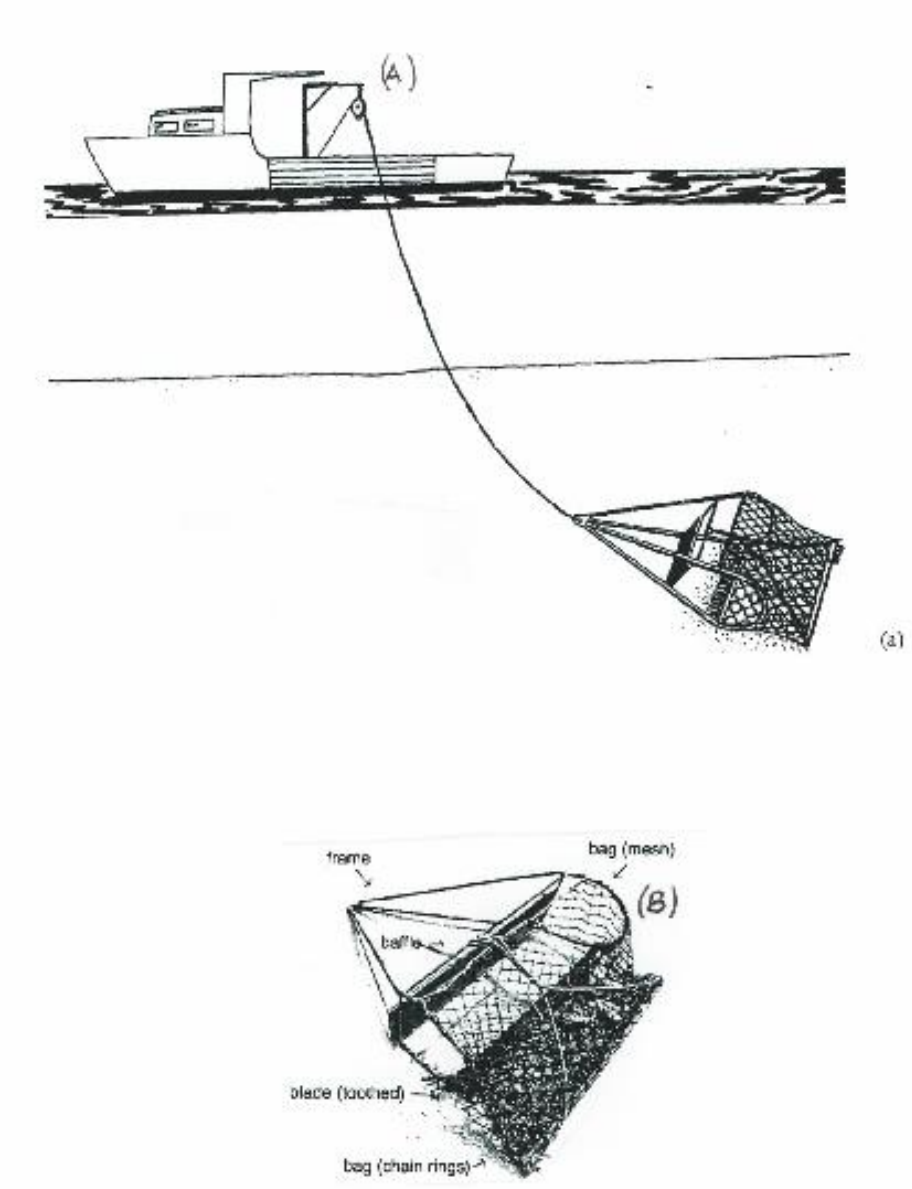


**Table 1 Louisiana commercial oyster license fees**[2]

| Method Commercial license fees | Resident | Non Resident |
|---|---|---|
| Oyster Harvester Permit (captain only) | $100 | $400 |
| Oyster Tong (per tong) | $30 | $240 |
| Oyster Dredge (per dredge) | $25 | $200 |
| Public Oyster Seed Ground Vessel Permit | $15 | $60 |
| Oyster Cargo permit | $250 | $1105 |

Any oysters taken from the public natural reefs, or the oyster seed grounds, or reservations, except those in Calcasieu Lake or Sabine Lake, shall be placed only on a vessel which has an Oyster Seed Ground Vessel permit issued. This permit must be issued in the name of the vessel owner and must identify the vessel permitted by including the state registration number or the United States Coast Guard documentation number. Each person in charge of an oyster cargo vessel shall purchase an Oyster Cargo Vessel permit.

Any person who qualifies and who desires to lease a part of the bottom of any state waters shall present to the Secretary of the LDW&F a written application and cash deposit of such amount as determined by the department. Lessees, under the supervision of the department, shall stake off and mark the lease water bottoms in order to locate accurately and fix the limits of the water bottoms embraced by each lease. Areas shall also be prominently marked with signs which state the lease number and name or initials of the lessee. Oysters shall not be harvested from any unmarked lease.

Culling oysters, i.e., discarding undersized oysters or dead shell, shall be performed only on the open designated public grounds or on private leases on which the fisherman is authorized to take oysters. At no time will the act of culling oysters be permitted in areas closed to harvesting oysters. The taking of oysters one-half hour after sunset until one-half hour before sunrise is prohibited. Oysters taken from the reefs - either for sale or consumption - shall be landed in Louisiana, except that persons in possession of an out-of-state oyster landings permit may land oysters taken from private leases only in any state. Sacks or any other types of containers used to hold oysters harvested in Louisiana and placed in commerce must be tagged with a tag issued by LDW&F.

## 6. Location and Scale of Fishery

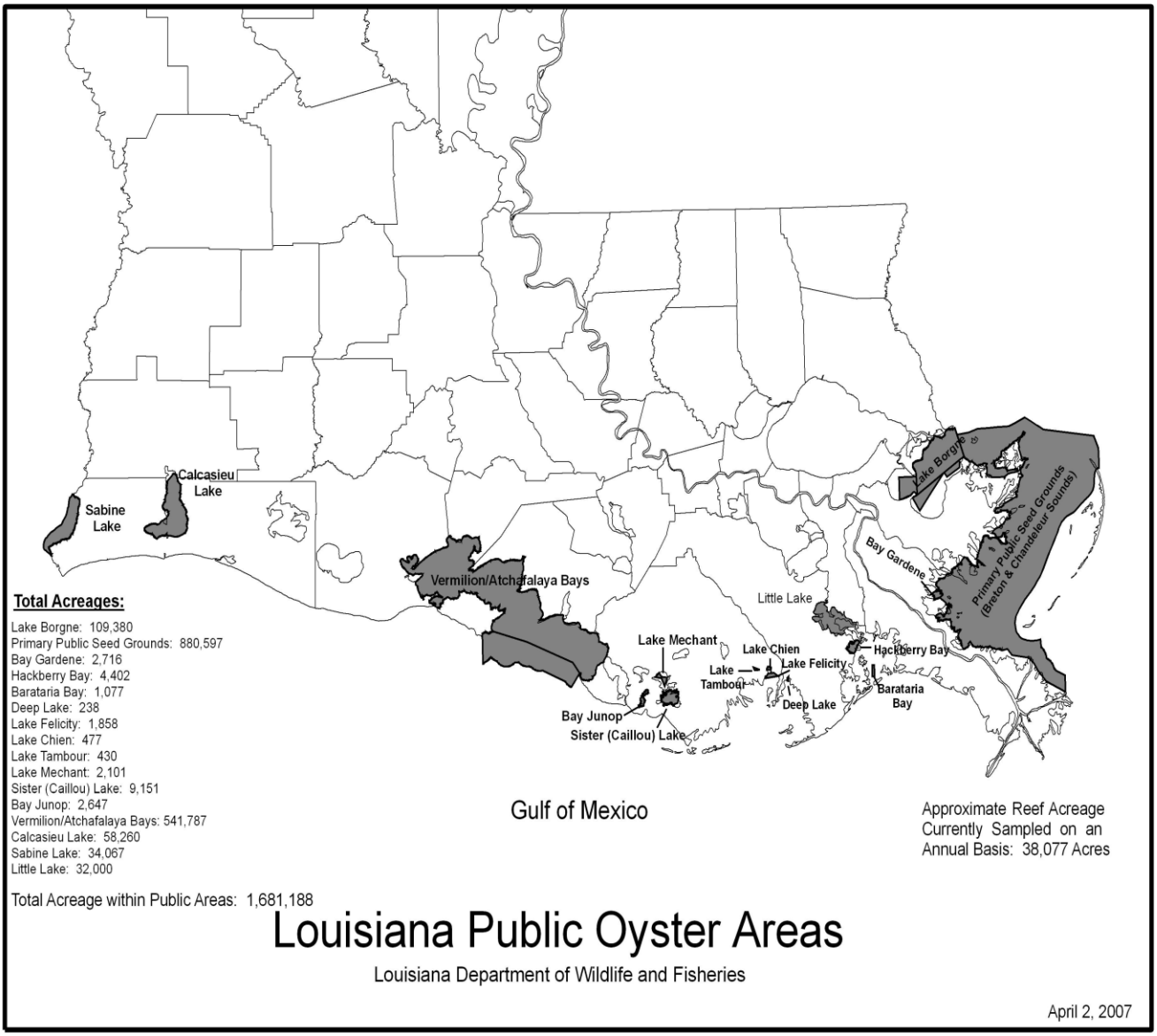
Oyster grounds are divided between public and private in Louisiana. There is a strong legal bias against any State interference or interaction on private grounds. Public grounds comprise approximately of 1.7 million acres and private grounds comprise 390,000 acres. The private grounds are under 15-year leases and the owners are expected to maximize productivity. A moratorium on private leases was implemented in 2002 because of coastal habitat concerns and associated restoration strategies.

[2] Published on *Louisiana Department of Wildlife and Fisheries* (http://www.wlf.louisiana.gov)

Harvest from private leases for commercial purposes is unlimited. Recreational oyster fishermen may harvest oysters: in leased areas only with the written permission of the lease holder; in personally leased areas; and, in areas open to the public for the harvesting of oysters. The catch is limited to two sacks per person per day for personal consumption.

The LDW&F is responsible for managing this resource on public grounds through monitoring the size and health status of stocks through activities such as setting oyster seasons, monitoring harvest levels reef building and permit controls. Public seed grounds, which are designated by the LDW&F, are shown in Figure 2.

**Figure 2 Louisiana Public Oyster Areas**[3]




[3] Louisiana 2010 stock assessment http://web.wlf.louisiana.gov/pdfs/fishing/programs/2010-Oyster-Stock-Assessment-Report.pdf

## 7. Fishing Season and Biology of the Species

The oyster stocks on public grounds are assessed annually to provide a forecast of likely harvest levels and also to advise the Louisiana Wildlife and Fisheries Commission (the Commission) if the season should be opened on the usual date of the first Wednesday following Labour Day. No commercial-sized oysters may be taken off public grounds or reservations until the second Monday in October. The Commission[4] controls harvesting on public oyster beds depending on this biological data[5]. The oyster harvest season for state public oyster beds (seed grounds and reservations) generally runs from the first Wednesday following Labour Day in September through April 30 of the following year. The owner of an oyster lease, or his designee with written permission from LDW&F, may fish oysters at any time of year on their lease. The Commission also sets the open season for commercial taking of oysters from Calcasieu Lake and Sabine Lake, which for Calcasieu Lake, shall begin on any date between October 15th and November 1st, and shall end on April 30th or on a date set by the Commission. Open season dates are set by the Commission for Sabine Lake after consideration of recommendations by the Louisiana Oyster Task Force. There is active compliance enforcement through the task force team' which actively looks for market size infringements, enforces Department of Health regulations, and investigates matters such as theft from private leases. The Oyster Task Force holds public meetings once every couple of months to discuss industry issues. Minutes of these meetings are available through the Louisiana Seafood Marketing Board.[6]

Oyster fishing is usually left open on public grounds until the Catch Per Unit Effort (CPUE) reduces to 30 sacks per days/vessel regardless of which gear type used. Lower daily limits exist for Sabine Lake and Calcasieu Lake. All oysters taken from public grounds must be three inches or greater in length from hinge to mouth. A lessee of private oyster grounds may be permitted to take undersized oysters from public grounds for bedding purposes only. Size restrictions do not apply to commercially harvested oysters taken from a private lease. Not more than 25 sacks per boat per day may be taken from Sabine Lake. Harvests in Calcasieu Lake cannot exceed 25 sacks of oysters per day per licensed vessel.

### American Oyster Life Cycle History[7]

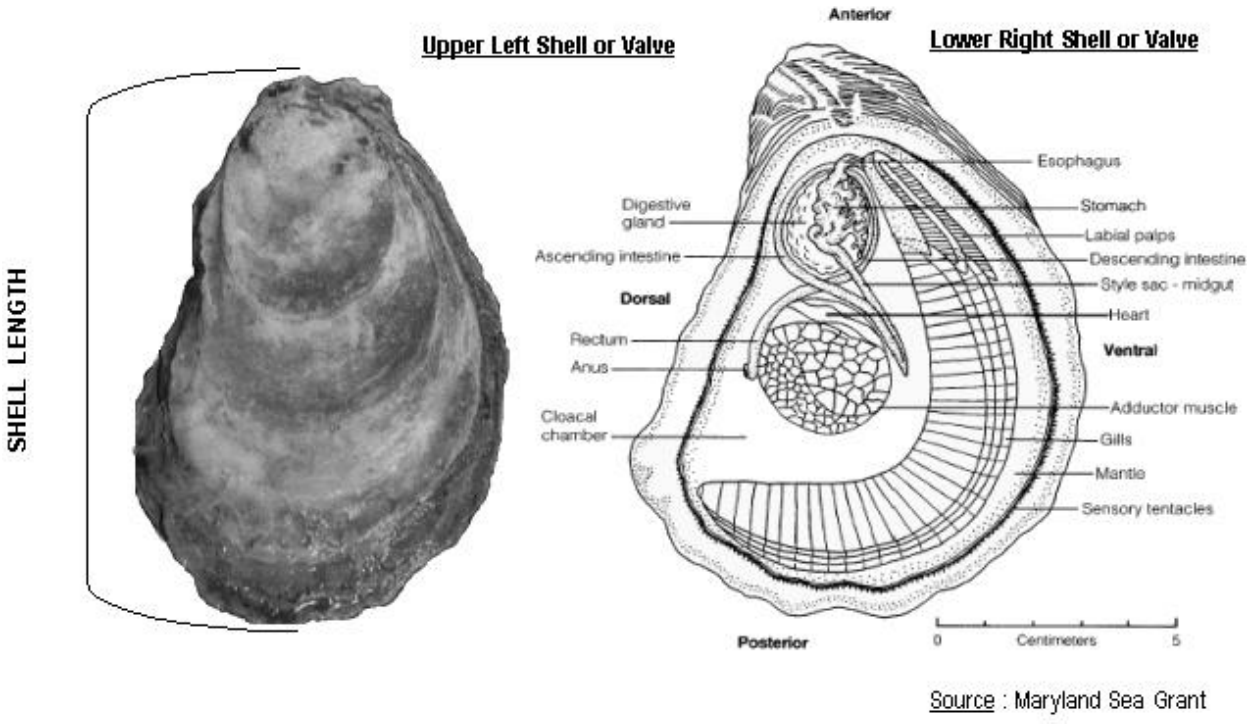
This oyster inhabits estuaries, sub-tidal and tidal regions, which amount to 3600 km2 (1400m$^2$) of suitable habitat along the gulf coast of Louisiana. Brackish water produces a unique chemical environment in which oysters flourish and the tide disperses a variety of nutrients from rivers across the oyster beds. Extreme fluctuations in water temperature and salinity in these shallow estuarine environments coupled with low level rain fall can affect the status of this resource as this species is an immobile bottom dweller that needs a steady flow of water through the gills for respiration, feeding, and excretion.

The oyster can be identified by its left valve which is thicker and heavier than the right valve and with a deeper cup. The left valve is always cemented to the substrate by the left hinge which lacks hinge

[4] http://www.wlf.louisiana.gov
[5] http://web.wlf.louisiana.gov/pdfs/fishing/programs/2010-Oyster-Stock-Assessment-Report.pdf
[6] http://www.louisianaseafood.com
[7] Stanley, J.G., and M.A. Sellers. 1986. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (Gulf of Mexico)--American oyster. U.S. Fish Wild. Serv. Biol. Rep. 82(11.64). U.S. Army Corps of Engineers, TR EL-82-4. 25 pp. http://www.nwrc.usgs.gov/wdb/pub/species_profiles/82_11-064.pdf

teeth. There are no gaps between the hinges when closed. The shape of the shell can be variable depending on the characteristics of the environment. For example, in silty muddy environments the shape of the shell can be straight (straight umbone), on hard substrates the umbone generally are curved and point posteriorly; soft substrate reef oysters tend to be more slender and ornamented. The American is dioecious changing from male to female (protandry) or from female to male (protogyny), but few are true hermaphrodites. Oysters develop functional gonads at a young age (2 to 3 months) and are less than 1cm in size (< 1 cm).

**Figure 3 General representation of the American Oyster (*Crassossteria virginica*)**




Temperature or salinity changes usually trigger the release of sperm from one or more males. This species is oviparous and releases gametes into the water column during reproduction, stimulated by water temperature changes which may vary depending on the stock/population. Louisiana stocks spawn in late May and June, when males release phermones and sperm into the waters which stimulates the females to release their eggs (23 million to 86 million eggs/spawning)[8] and they spawn several times per season.

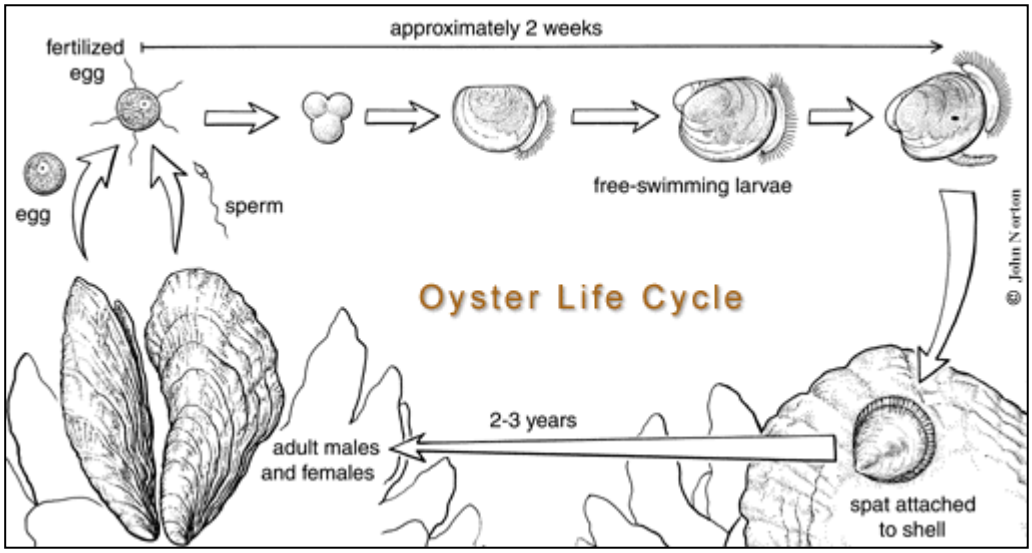
The egg hatches 6 hours after fertilization when water temperatures are at 24°C and remain in the water column as larvae for 2 to 3 weeks passing through several stages of development. The larvae are vigorous swimmers and have a pair of pigmented eyes, an elongate foot, and a large byssal gland and are 0.3mm in size. Oyster larvae then start a crawling phase and look for substrate to attach and cement themselves with a drop of liquid cement from a pore in their foot, which they lose and are now termed oyster spat. These newly settled oysters prefer substrate like shells and stones in the

[8] Stanley, J.G., and M.A. Sellers. 1986. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (Gulf of Mexico)--American oyster. U.S. Fish Wild. Serv. Biol. Rep. 82(11.64). U.S. Army Corps of Engineers, TR EL-82-4. 25 pp. http://www.nwrc.usgs.gov/wdb/pub/species_profiles/82_11-064.pdf

sub-tidal and metamorphosis may be delayed if these suitable substrates are not found. Juveniles (approximately 26mm) are now called seed oysters. Adults are sessile organisms, living in clumps of reefs and beds. These communities change the habitat in which they live by altering water currents around them.

Growth alters with temperature, environmental factors, food and depending on stage lifecycle. Typically Louisiana young oysters[9] grow 0.26mm to 0.33mm per day, and reach 30 mm in 3 months, 55 mm in one year and 85 mm in 2 years and 115 mm in 3 years; depending on the specific area. Growth rate are thought to generally increase in exposed areas with increased turbidity and relates to phytoplankton activity.

**Figure 4 Life Cycle of the Oyster[10]**




[9] Stanley, J.G., and M.A. Sellers. 1986. Species profiles: life histories and environmental requirements of coastal fishes and invertebrates (Gulf of Mexico)--American oyster. U.S. Fish Wild. Serv. Biol. Rep. 82(11.64). U.S. Army Corps of Engineers, TR EL-82-4. 25 pp. http://www.nwrc.usgs.gov/wdb/pub/species_profiles/82_11-064.pdf

[10] http://science-art.com/image/?id=4153&pagename=Oyster_Life_Cycle_Illustration

## 8. Units of Certification

The MSC Guidelines to Certifiers specifies that the Unit of Certification is "The fishery or fish stock (=biologically distinct unit) combined with the fishing method/gear and practice (=vessel(s) pursuing the fish of that stock) and management framework."

Three Units of Certification for this Fishery are defined as follows:

| | **Unit of Certification 1** |
|---|---|
| **Species** | *Crassostrea virginica* |
| **Common name** | American Oyster |
| **Geographical range of fishing operation** | Louisiana State Waters on public grounds |
| **Stock** | Louisiana Oyster Stock (Seed<3inch and marketable oyster >3inch) |
| **Method of capture** | Dredge |
| **Management System** | LDW&F and Commission under Titles 56 and 76 |
| **Client Group** | To be determined |

| | **Unit of Certification 2** |
|---|---|
| **Species** | *Crassostrea virginica* |
| **Common name** | American Oyster |
| **Geographical range of fishing operation** | Louisiana State Waters<br>on public grounds |
| **Stock** | Louisiana Oyster Stock<br>(Seed <3inchand marketable oyster >3inch) |
| **Method of capture** | Tong |
| **Management System** | LDW&F and Commission under Titles 56 and 76 |
| **Client Group** | To be determined |

| | **Unit of Certification 3** |
|---|---|
| **Species** | *Crassostrea virginica* |
| **Common name** | American Oyster |
| **Geographical range of fishing operation** | Louisiana State Waters<br>on public grounds |
| **Stock** | Louisiana Oyster Stock<br>(Seed and marketable oyster >3inch) |
| **Method of capture** | Scraper |
| **Management System** | LDW&F and Commission under Titles 56 and 76 |
| **Client Group** | To be determined |

## 9. Client Name and Contact Details

The contacts for the client group are:

**Mr. Jason Froeba**

Fisheries Oversight

Louisiana Department of Wildlife & Fisheries

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## 10. Client Group

The client group for MSC purposes would require further definition in the event of the fishery proceeding to full assessment. The client group is wholly and exclusively covered by the certificate.

## 11. Other Eligible Fishers

If this fishery should progress under an MSC full assessment then a comprehensive list of all eligible fishers will be required from the client.

## 12. Fishing Operators

If this fishery should progress under an MSC full assessment then a list of all eligible fishing operators shall be provided by the client. Any vessel fishing vessel or entity prosecuting the Oyster fishery, defined by the method of capture under the Unit of Certification and under the authority of the LDW&F.

## 13. Certificate Sharing Mechanism

In the course of the certification it is possible that further clients outside the unit of certification may seek to join under if this certification is successful. This would be in accordance with the MSC's stated desire to allow fair and equitable access to the certification. This pre-assessment covers that

part of the fisheries managed by LDW&F and there are no other active assessments or related fisheries known to be currently pursuing certification at this time.

## 14. Risk Based Framework.

There is an indication that the risk-based framework may be required as biological references points are not adequate for this fishery and alternative proxies may be more suitable. The risk based framework is designed to score and evaluate Performance Indicators within the default assessment tree in data deficient fisheries.

## 15. Enhanced Fisheries

In considering this issue, the assessment team has recognized one category of an enhanced fishery as defined by the MSC (in Tab 001 v2). From the material provided, however, there appears to be limited enhancement in this fishery which is defined as 'any human interventions in the natural production system associated with the fishery'. The Louisiana oyster fishery is a fixed bottom industry which involves private leasing of grounds, laying cultch to promote enhanced settlement of spat, some transferring of undersized oysters mainly from public grounds to private grounds, reef development and restoration, and shell recovery schemes. Public grounds may also be considered as being within the scope of enhancement through natural reef restoration and reef development (habitat modification). If going through to MSC full assessment only oysters from public grounds are being considered for certification, then a robust method of identification will be needed to separate private leases from public fisheries. Public harvesting meets the requirements of the MSC scheme and scope of enhanced fishery.

### A. Linkages to and maintenance of a wild stock

The fishery incorporates an element of harvesting of a wild population (wild spat or oyster seed) and the natural productivity and genetic biodiversity of that population is not undermined as it incorporates natural setting. The species are native to the geographic region of the fishery and the natural production areas from which the fishery's catch originates. However, further investigation may be warranted on any impacts of translocating from one area to discrete areas at a distance from the original place with respect to any local adaptation expressed by American oysters. There are natural reproductive components of the stock on which the harvest on private leases occurs that maintain themselves without having to be restocked every year.

### B. Habitat and ecosystem impacts

Any modifications to habitat of the oyster stock are reversible in this fishery and do not cause serious or irreversible harm to the natural ecosystem's structure and function. Natural reef systems are highly diverse high value ecosystems. On public grounds reef restoration and development and shell recovery schemes[11] are established which enhance and support these ecosystems adding value rather than causing irreversible harm.

[11] http://www.wlf.louisiana.gov/sites/default/files/pdf/publication/32733-louisiana039s-oyster-shell-recovery-pilot-project/oyster_shell_recovery.pdf

## 16. Management System

In the United States, individual state governments are empowered to manage fisheries that take place within State Waters. These waters vary from three to twelve miles from land; in the case of Louisiana they extend three imperial nautical miles seaward from the baseline (normally taken as the mean low-water mark) from which the extent of the continental shelf is measured.[12]

Louisiana enacted its first wildlife conservation law in 1857 and had many oysters regulation in place by the late 1800s. The first separate agency for overseeing wildlife and fisheries conservation in the State (the Louisiana Board of Commissioners for the Protection of Birds, Game and Fish) was established in 1909. A year later the first department was established (the Louisiana Department of Conservation).[13]

The current structure of fisheries management in Louisiana consists of the LDW&F, the Commission, the Louisiana Wildlife and Fisheries Foundation, and the State Legislature. The Louisiana Seafood Promotion & Marketing Board supports the industry through seafood promotion and marketing initiatives.

The Louisiana Legislature created the current LDW&F in Act #720, the Executive Reorganization Act of 1975. The name and administrative structure of LDW&F were codified in R.S. 36: s601- s609. LDW&F is in the executive branch, headed by a Secretary and is the state agency responsible for management of the state's renewable natural resources including all wildlife and all aquatic life. The control and supervision of these resources were assigned to the department in the Constitution of the State of Louisiana of 1974, Article IX, section 7 and in revised statutes under Titles 36 and 56. Responsibilities related to enforcement of boating safety laws are also assigned to LDW&F in Title 34, Chapter 4, part IV.[14]

The role of the Commission is one of policy decision-making, including the setting of opening times for specified fisheries that are implemented by LDW&F. Its decisions would be informed by input from LDW&F and the fishing industry. They could result in new actions by the LDW&F or new legislation enacted by the Legislature. The membership of the Commission consists of 6 members with 6-year terms, plus 1 member whose term runs concurrently with the Governor. Three of the 7 members are representatives of the commercial fishing and fur industries from the coastal parishes and 4 members are "other than representatives of the commercial fishing and fur industries" from the State at large.

The Louisiana Wildlife and Fisheries Foundation is a non-profit public, charitable foundation, tax exempt under Section 501(C) (3) of the Internal Revenue Code. The Foundation was formed to provide a means for individuals and corporations to become financial partners with the t LDW&F and the Commission in conserving Louisiana's wildlife and fish resources. The goals of the Foundation include habitat conservation, environmental education and training, natural resource research and

[12] "What is the Outer Continental Shelf?", by Minerals Management Service of the U.S. Department of the Interior
[13] http://www.wlf.louisiana.gov/louisiana-wildlife-and-fisheries-co
[14] Ibid.

management and general financial assistance to the LDW&F programs and projects so that it may better serve the public.[15]

In 1984, the State of Louisiana created the Louisiana Seafood Promotion & Marketing Board to support Louisiana's commercial fisheries industry and to respond to changes in the marketplace and in the environment. The Board is composed of members appointed by the Governor representing the different sectors of the industry. Staff of the board are employees of the LDW&F. They develop and direct a variety of communications programs to strengthen and revitalize the Louisiana seafood industry. Programs include market development, support of seafood industry trade associations and fisheries agencies, seafood promotions and special events, advertising and public relations.[16]

The Louisiana State Legislature is the law-making body of the state and can enact laws and regulations concerning all aspects of fisheries in State Waters. In so doing, it might receive advice from the Commission and the LDW&F, as well as representation from the fishing industry and other interested parties. It occasionally enacts laws largely on the basis of lobbying by fisheries interests. It empowers the LDW&F or the Commission to carry out certain fisheries management activities, or in some cases, it may restrain what these agencies may do. All of the rules respecting management of the State's fisheries are contained in various State Statues that have been enacted over the years.

The general approach to fisheries management in Louisiana appears to be based heavily on the use of legislative statutes and resolutions. As a result, the management arrangements for many fisheries change little over long periods of time. Annual adjustments seem to be the exception rather than the rule. This law-based approach puts the legislative branch clearly in control of the executive/management branches.

**Louisiana Oyster Fishing Rules**

These rules have been previously described[17] in this report and are the various laws that apply to the Louisiana oyster industry. Some additional laws are stated as follows:

**Oyster Fishing Authorizations**

Commercial fishermen harvesting or possessing oysters in state waters must purchase an oyster harvester license, in addition to any and all licenses otherwise required. Commercial fisherman harvesting oysters from the public oyster seed grounds or reservations, except those grounds of Calcasieu and Sabine Lakes, are required to possess a valid Public Oyster Seed Ground Vessel Permit.

All fishermen must obtain a Commercial Fisherman's licence, appropriate vessel registrations and a licence for each type of oyster gear fishing gear to be used. Generally, there are no restrictions on the issuance of these licences; limited entry does not apply, except that no new Public Oyster Seed Ground Vessel Permits are available after December 31, 2009. Non-residents may acquire Louisiana Oyster fishing authorities, but at a higher fee than residents.

[15] http://www.wlf.louisiana.gov/lwff
[16] http://louisianaseafood.com/
[17] Louisiana Commercial Fishing Regulations 2011
http://www.wlf.louisiana.gov/sites/default/files/pdf/publication/31745-commercial-fishing-regulations/commercial_fishing_2011.pdf

A trip ticket must be recorded at the first point sale of oyster. A monthly submission sheet is also required each month by the wholesale/retail dealer or fresh product license holder, regardless of whether or not any trip tickets were completed.

The holder of a commercial fisherman's license may transport and sell his own catch to any licensed Louisiana wholesale/retail seafood dealer located within the state of Louisiana. The required data collection is then performed by the dealers who buy from the fishers. These data are sent to the LDW&F monthly and are generally referred to as "trip tickets." If a fisherman wishes to transport and sell catch outside the state, or if he sells directly to retail establishments or directly to consumers, he will be required to have either a seafood dealer's license or a fresh products license. In these cases the fisherman, himself, will be responsible for recording and returning trip tickets monthly.

Whenever the holder of a commercial fisherman's license sells or transfers possession of his own catch to a wholesale/retail seafood dealer, he shall present the license to the dealer for license verification. The commercial fisherman shall provide the wholesale/retail seafood dealer with all information, as determined by the LDW&F to be necessary to properly manage the fishery resources of the state. That information shall include, but may not be limited to, the fisherman's first and last name, license number, signature, gear used, vessel used, primary location of where fish were caught, duration of trip, and permit numbers for species requiring a permit to harvest.

There is an Appeal Committee for Public Oyster Seed Ground Vessel Permit decisions and another for Department of Hospital and Health (DHH) classification decisions on oyster harvest areas. There is also the right to an administrative hearing if a person is not satisfied with the appeal decision[18].

Essentially, the Louisiana oyster fishery management system involves an stock assessment on public grounds that forecasts likely fishing success in the open season which is usually from September to the following April. This season limitation does not apply to harvesting from private leases. The fishery on public grounds is subject to a minimum size restriction for commercial and recreational harvesting; that limit does not apply to leases. Leasees may also take undersized oysters from public grounds for seeding purposes only. There are minimum gear specifications for public grounds. All harvests from public grounds must be sold in state but out-of–state sales may be made from leases with the proper sales permit.

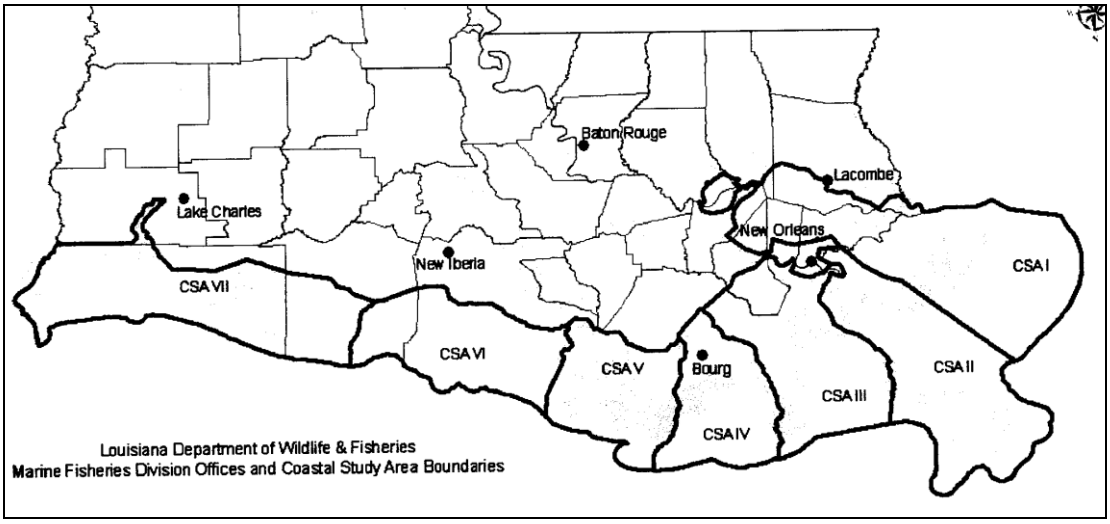
There is no catch quota; fishing on public grounds is open access, except for a moratorium on the issuing of new Public Oyster Seed Ground Vessel Permits as of December 31, 2009. The use of leases is a form of limited entry that establishes a territorial user right in the fishery (TURF); lease operators are not restricted by seasons or minimum sizes as are harvesters on public grounds. In recent years, the proportion of the total state oyster harvest coming from leases has rebounded to about three quarters after a period when most came from public grounds. There is currently a moratorium on issuing new leases, effectively halting the extent of limited entry in this fishery.

[18] Louisiana Commercial Fishing Regulations 2011
http://www.wlf.louisiana.gov/sites/default/files/pdf/publication/31745-commercial-fishing-regulations/commercial_fishing_2011.pdf

## 17. Catch Data

Louisiana has a well developed system to collect information of the status of the oyster stock, and to monitor fishery landings, that indicate the likely fishing success for the subsequent year and to set oyster limits. Square meter sampling is completed every summer in conjunction with estimated reef acreage to estimate stock size. There are seven Coastal Study Areas (CSAs) [see figure 5], and within each area the status of the oyster resource is evaluated annually using well accepted fishery independent sampling procedures. Landings data is collected from state's Trip Ticket data reporting system. The fishery independent survey data and fishery dependant landings data are summarized in the annual stock assessment (data from National Marine Fisheries Service (NMFS) and LDW&F Trip Ticket system)[19].

**Figure 5 LDW&F Marine Fisheries Division Coastal Study Areas Boundaries**




Oyster abundance currently appears to be at a low historical level[20] and there are no reference points or relevant proxies to limit fishing mortality in this fishery if it were determined to be required. No Total Allowable Catch (TAC) or exploitation rate calculations are attempted, and the oyster season is opened on a size prediction and closed when the catch per day drops below a pre-set level (30 sacks per day). Annual stock assessments do not estimate exploitation rates, nor do they cite any reference points to which estimated annual stock abundance and exploitation rates could be compared for the effective precautionary management of the fishery.

Estimated stock size[20] levels for 2010 were 4.7% higher totalling 1,224,377 barrels compared to 2009 levels, due to increased seed stock (24.3% compared to 2009 levels) from several CSAs (Table 2) from public grounds. In CSA 1, 45 acres of artificial reef were constructed which is suggested to have increased seed stock in this year. Marketable oysters dropped 13.2% in 2010, compared to 2009 levels in several of the CSAs[21].

[19] Currently information from both sources would need to be substantiated and a differentiation made between federal or state waters landings i.e. Louisiana trip ticket data and Nationwide NFMS commercial harvest data.
[20] Louisiana 2010 stock assessment http://web.wlf.louisiana.gov/pdfs/fishing/programs/2010-Oyster-Stock-Assessment-Report.pdf
[21] Sourced from Nationwide NMFS Data in 2010 stock assessment

**Table 2 Estimated State-wide oyster stock size from public grounds in Louisiana in 2010[22]**

| CSA | Seed (bbls)* | Sack (bbls)* | Total (bbls)* |
|---|---|---|---|
| 1 | 120,188 | 94833 | 215021 |
| 2 | 105,836 | 39739 | 145,575 |
| 3 | 5,020 | 1207 | 6,227 |
| 4 | 2,021 | 499 | 2,520 |
| 5 | 154,340 | 36,971 | 191,311 |
| 6 | NA | NA | NA |
| 7 | 307,265 | 356458 | 663,723 |
| Total | 694,670 | 529,707 | 1,224,377 |

*bbls (Barrels)

The general trend in the market oysters over 3 inches, indicates that there was a 13.2% drop in marketable oyster levels in 2010 compared to 2009 levels in several of the CSAs.

**Table 3 Harvest estimates for 2009/2010 oyster season on the private grounds of Louisiana (boarding reports*)**

| CSA | Seed (bbls) | Market Oysters (sacks) | Total (bbls) |
|---|---|---|---|
| 1* | 57,055 | 158,028 | 136,069 |
| 2* | 82,688 | 167,614 | 166,495 |
| 3* | 7,885 | 504 | 8,137 |
| 4* | 0 | 0 | 0 |
| 5* | 4,610 | 13,676 | 11,448 |
| 6* | 0 | 0 | 0 |
| 7 (Trip ticket) | 0 | 137,074 | 68,537 |
| Total | 152,238 | 476,896 | 390,686 |

From the 2010 stock assessment report 52% of the resource was exploited by April 2010 (close of season), including 106 %[22] of marketable oysters available which put increased pressure on other public areas. Calcasieu Lake had the highest harvest since 1987 which may have reflected a reduction in market sized resource during the 2010 assessment.

[22] Louisiana 2010 stock assessmenthttp://web.wlf.louisiana.gov/pdfs/fishing/programs/2010-Oyster-Stock-Assessment-Report.pdf

**Table 4 Landing of marketable oyster from 1999 to 2010 on the public grounds of Louisiana (LDW&F Data)[23]**

| Year | Public Oysters | Dockside Value $ |
|---|---|---|
| 1999 | 22596635 | 29913836 |
| 2000 | 24285940 | 30018274 |
| 2001 | 372931.5 | 197471.3 |
| 2002 | 1618464 | 1294497 |
| 2003 | 741205.4 | 946458.4 |
| 2004 | 473181.2 | 241801.6 |
| 2005 | 301263.7 | 174267.3 |
| 2006 | 579 | 1266.5 |
| 2007 | 19357.28 | 9662.7 |
| 2008 | 50266.05 | 26464.74 |
| 2009 | 9524.16 | 9052.35 |
| 2010 | 20296 | 21412 |
| Total | 50489644 | 62854464 |

Table 3 and 4 shows landings of marketable oysters from 1999 to 2010 from public and private grounds from LDW&F trip ticket data. Overall, public ground landings were 38% higher for these years in pounds and approximately double in value than marketable oysters from private leases. For 2010, however, landings on private grounds were approximately 98 % higher than public grounds according to LDW&F landings data.

**Table 5 Landing of marketable oyster from 1999 to 2010 on the private grounds of Louisiana (LDW&F Data)23**

| Year | Private Oysters | Dockside Value $ |
|---|---|---|
| 1999 | 371512.6 | 708327.7 |
| 2000 | 27244.01 | 25423.83 |
| 2001 | 707004.1 | 1232908 |
| 2002 | 82210.72 | 160588.4 |
| 2003 | 763115.5 | 1942156 |
| 2004 | 1460100 | 791106.8 |
| 2005 | 2931321 | 4449318 |
| 2006 | 11370440 | 11503846 |
| 2007 | 5618233 | 5584661 |
| 2008 | 1230140 | 670608.6 |
| 2009 | 5618233 | 5584661 |
| 2010 | 1230140 | 670608 |
| Total | 31409693 | 33324215 |

[23] Landing rates are provided direct by the LDW&F on marketable oyster in whole pounds. Seed oysters harvested has not been provided at this time. Data from both the LDW&F and NFMS would need to be substantiated i.e. Louisiana trip ticket data and Nationwide NFMS commercial harvest data, if this fishery progresses to full assessment.

**Table 6 Landing and dockside value of oysters for year 1999 to 2010 on public and private grounds of Louisiana (LDW&F Trip Ticket Data)[23]**

| | Total Marketable Oyster Landings and Commercial Value | |
|---|---|---|
| Year | Landing | Value $ |
| 1999 | 229,68148 | 306,22164 |
| 2000 | 243,13184 | 300,43698 |
| 2001 | 10,79936 | 14,30379 |
| 2002 | 17,00675 | 14,55086 |
| 2003 | 15,04321 | 28,88615 |
| 2004 | 19,33281 | 10,32908 |
| 2005 | 32,32584 | 46,23585 |
| 2006 | 113,71019 | 115,05113 |
| 2007 | 56,37591 | 55,94324 |
| 2008 | 12,80406 | 6,97073 |
| 2009 | 56,27757 | 55,93714 |
| 2010 | 12,50436 | 6,92020 |

Table 6 shows that the average landings and their values by year 1999 to 2010 from combined public and private grounds from LDW&F trip ticket data. Overall landings and the commercial value of marketable oyster peaked in 1999 and 2000 with lower levels in 2006.

## 18. History of the Fishery

The first accounts of the exploitation of the oyster resource in Louisiana were early French settlers who opened and expanded the oyster industry. In the mid 1840s, immigrants moved to Louisiana and began fishing for oysters in the rich estuarine waters adjacent to the Mississippi River. They found oysters growing naturally on reefs and gathered them for local consumption and realized the abundance of oysters that grew on the eastern side of the river which began the development and cultivation of the oyster industry in the estuaries. This method of oyster harvest has evolved over the years with hand-picking of the oysters from reefs, with harvests limited by depth of the water, weather, and physical strains hand-picking placed on the body. The early immigrants collected seed oysters, placed them on skiffs, and rowed or sailed to favorable areas. Once in a favorable area, they painstakingly “planted” the oysters one by one with enough space in-between to allow the oysters room to grow. They enclosed the oysters with wooden fences in order to keep the black drum (*Pogonias cromis*) away and also to keep others from poaching their crop. Soon, oystermen developed oyster tongs with which to collect oysters while standing on the boat. This cultivation developed over the years into a partnership between the state and private oystermen through the use of both public seed grounds and privately leased state water bottoms.

The history[24] of the industry governance began with the first wildlife conservation law in 1857, when the General Assembly passed a law designed to protect game birds in St. Bernard Parish. That law (Act 100) set in motion a series of conservation movements that would ultimately lead to the creation of the Louisiana Board of Commissioners for the Protection of Birds, Game and Fish. The

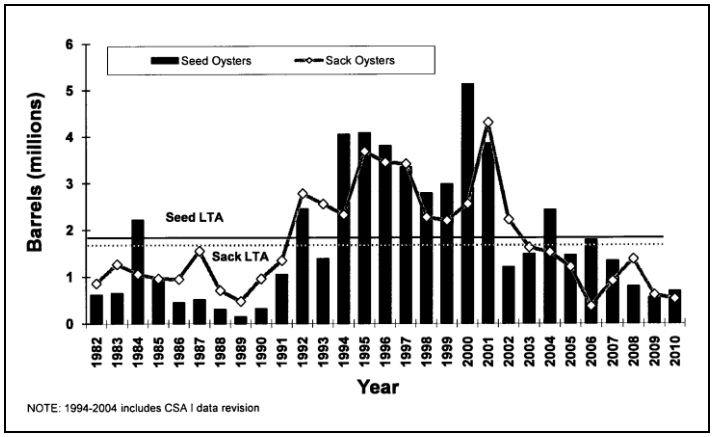
[24] http://www.wlf.louisiana.gov

law, however, was only enforceable to the local jurisdictions and only later, when oyster-harvesting legislation was established that the power to enforce was given to all parishes.

In 1870, the state's first annual oyster season was set (Act 18) from Sept. 16 through March 31, as an attempt to conserve the resource. As the industry grew, lawmakers continued to pass legislation, hoping to provide some type of stability or uniformity for the oyster industry. That led to the creation of the Oyster Fishing Regulatory Board in 1872, with many more oyster regulations following in the 1880s. In 1900, the General Assembly appointed an oyster committee to investigate oyster operations and determine the best means to regulate the industry with consistent, fair and enforceable laws. The committee was comprised of three state representatives and two state senators who were instructed to bring recommendations back to the Assembly when it convened in 1902. In 1909, a more formal body was created and given the task of overseeing wildlife and fisheries conservation in Louisiana, called the Louisiana Board of Commissioners for the Protection of Birds, Game and Fish. In 1910, the Louisiana Oyster Commission (in 1902) merged with the Board of Commissioners to create the Louisiana Department of Conservation (Act 153) and the creation of a state oyster commission having sole jurisdiction of oysters throughout the entire coast insuring consistency and uniformity. In 1912, the Conservation Commission of Louisiana was formed as a department of State government, with the mission of providing for the protection of birds, fish, shellfish, wild quadrupeds, forestry and mineral resources of the state. In 1918, the name of the agency changed back to the Department of Conservation, and directed that it be controlled by the Commissioner of Conservation, who would be appointed by the Governor, by and with the consent of the Senate, for a term of four years. In 1944, the Louisiana Department of Wild Life and Fisheries was officially created. In 1952, the agency's name was changed to the name Louisiana Wild Life and Fisheries Commission.

Dockside value in 2009 of public oysters was valued at $50 million and overall harvest was estimated at 14.9 million pounds of meat.[25] Seeds from these public grounds also supply the private lease grounds with new stock. From 1970 to 1992 most Louisiana Oyster landings came from private lease holders, but this changed from 1992-2001 where public grounds contributed to an increasing part of landings numbers. In 2008, landings from public grounds increased to 47% of all landings while in 2009 private lease landings increased to 77% of landings (NFMS Data sources).

**Figure 6. Historical stock sizes of the oyster resource on public grounds 1982-2009**




[25] Louisiana 2010 stock assessment http://web.wlf.louisiana.gov/pdfs/fishing/programs/2010-Oyster-Stock-Assessment-Report.pdf

**Figure 7 Historical Landings[26] of Louisiana Oysters from public oyster grounds and private grounds from 1970 to 2009**

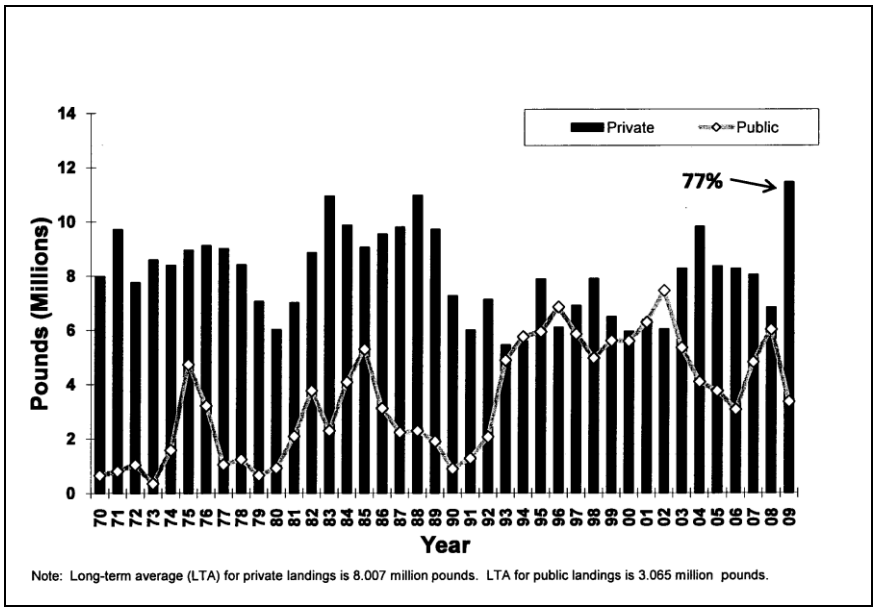



Figure 7 depicts the historical landings from the Louisiana oyster fishery from 1970 to 2009. The graph shows that private leased ground produced more oysters per pound on an annual basis from 1970 to 1994. In 1996, this trend changed with both sectors comparable and in 1996 and 2002 public grounds out produced private grounds.

## 19. Other Fisheries in the Area

The Louisiana oyster fishery is a single target species fishery with little bycatch of other organisms other than some demersal finfish such as black drum and blue crabs that may be discarded. Currently the only fishery undergoing a full MSC Assessment is the Louisiana Blue Crab Fishery.[27] The Louisiana Shrimp Fishery outside the Louisiana State Line interacts with many other fisheries through retaining non-targeted species and through interaction of gear with other gears and habitat. Shrimp trawls within the state line tend to avoid areas of structure such as oyster beds and artificial and natural reefs, favouring smooth muddy bottoms.

## 20. External Influences

The main external influences (non fisheries) that have effects on this sessile resource are the loss of coastal habitats,[28] climatic or environmental effects on water conditions including: temperature; unstable salinity regimes; subsidence of the Mississippi delta; eustatic sea level rise; the effects on water salinity and sediment input to the estuaries related to the initial development and more recent

[26] Louisiana 2010 stock assessment http://web.wlf.louisiana.gov/pdfs/fishing/programs/2010-Oyster-Stock-Assessment-Report.pdf

[27] www.msc.org.

[28] http://www.coast2050.gov/report.pdf

openings of the Mississippi River levees; and, and the BP 2010 oil spill[29] which has significantly interrupted this fishery with potentially significant effects..

Natural and anthropogenic factors affect oyster-reef communities on public grounds include extreme low salinities caused by high river discharge and localized rainfall, as well as predation and disease typically associated with high salinity and temperatures causing stress to the animals. Oil and gas and related activity by-products, as well as harvesting itself, can reduce oyster abundance. The main determinants of annual yield appear to be environmental conditions, e.g., levels of fresh water, siltation, oxygen level reduction, etc., and the total available hard substrate which is reducing over time, although some is regained by artificial rebuilding. Physiological stress is imposed on oyster stocks in Louisiana waters infrequently when salinity is 5 ppt and water temperature is above 23°C causing oyster mortalities.

The effect of the BP oil spill of April 2010[30] is still being researched, but the 2010 assessment indicated no direct oil detection on reefs sampled. In areas where oil sheens were noted research is ongoing and to deter marsh effects all water ways, freshwater siphons and diversions were opened in special affected areas.

Several fish species feed on oysters including black drum (*Pogonias cromis*) and sheepshead (*Archosargus probatocephalus*). Large populations of black drum can have a detrimental effect on oyster reef communities, particularly vulnerable spat and freshly transplanted seed oysters. Oyster predators such as the southern oyster drill (*Stramonita haemastoma*) and stone crab (*Menippe adinia*) may also be an external influence on populations of oysters. The counter influence of the effect of oyster resource depletion as a prey item on dependent species would also be a consideration during full assessment.

## 21. Main Commercial Market

From 1998 to 2008 Louisiana Oysters accounted for 34% of all US landings which is the highest out of all other states. Landings for 2008 were 12.8 million pounds which accounted for 50% of the oysters from Gulf States.

Further market-based information, e.g., domestic versus foreign markets, is accessible from the LDW&F and/Louisiana Seafood Promotion and Marketing.

[29] http://www.wlf.louisiana.gov/oilspill
[30] www.cnrep.lsu.edu/pdfs/LSG%20Oil%20Spill%20FAQs.pdf

## 22. Certification Body

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## 23. Stakeholders

The following list is not exhaustive but indicates a range of consultations that would be carried out. This list would be completed in consultation with the stakeholders identified below and additional stakeholders may be identified during a full MSC assessment. However, 'stakeholders' for consultation must have a valid and established interest in the fisheries under assessment. Stakeholders may include the following:

| Organisation |
|---|
| Louisiana Seafood Promotion Board |
| Oceana |
| Louisiana State University |
| University Of Florida |
| Texas Sea Grant |
| University Of Florida |
| Caribbean Conservation Corps |
| Texas A&M |
| Gulf Of Mexico Fishery Management Council |
| The Environmental Defence Fund |
| The Ocean Conservancy |
| The Sustainable Fisheries Partnership |
| Alabama Department Of Conservation And Natural Resources |
| Mississippi Department Of Fisheries, Wildlife And Parks |
| South eastern Fisheries Association |

| |
|---|
| Louisiana Shrimp Association |
| National Marine Fisheries Service |
| Florida Fish And Wildlife Commission |
| Texas Department Of Parks And Wildlife |
| Oceans Trust |
| Florida Sea Grant |
| The Gulf And South Atlantic Fishery Foundation |
| Gulf State Marine Fisheries Commission |

## 24. Chain of Custody

In Louisiana, anybody purchasing seafood species directly from fishers, shrimpers, or other harvesters for commercial purposes, is required to complete a “trip ticket” detailing species, volume (in pounds), and payment (dockside value) of products exchanged between harvesters and purchasers. These data, published in the NMFS Commercial Fishery Harvest Statistics, provide a measure of activity between Louisiana harvesters and dockside dealers. If the separate production systems (public and private lease) were considered for full assessment, there may be two separate units for assessment. It would be important to ensure that traceability to separate production systems was assured through the reporting of landing data or otherwise.

## 25. Preliminary Evaluation

**MSC PRINCIPLES AND CRITERIA**

The MSC Principles and Criteria for Sustainable Fisheries form the standard against which the fishery is assessed and are organised in terms of three principles. Principle 1 addresses the need to maintain the target stock at a sustainable level; Principle 2 addresses the need to maintain the ecosystem in which the target stock exists, and Principle 3 addresses the need for an effective fishery management system to fulfil Principles 1 and 2 and ensure compliance with national and international regulations. The Principles and their supporting Criteria are presented below.

**Principle 1**

**A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery[31]:**

Intent:

The intent of this principle is to ensure that the productive capacities of resources are maintained at high levels and are not sacrificed in favour of short term interests. Thus, exploited populations would be maintained at high levels of abundance designed to retain their productivity, provide margins of safety for error and uncertainty, and restore and retain their capacities for yields over the long term.

Criteria:

1. The fishery shall be conducted at catch levels that continually maintain the high productivity of the target population(s) and associated ecological community relative to its potential productivity.
2. Where the exploited populations are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level consistent with the precautionary approach and the ability of the populations to produce long-term potential yields within a specified time frame.
3. Fishing is conducted in a manner that does not alter the age or genetic structure or sex composition to a degree that impairs reproductive capacity.

**Principle 2**

**Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.**

Intent:

The intent of this principle is to encourage the management of fisheries from an ecosystem perspective under a system designed to assess and restrain the impacts of the fishery on the ecosystem.

Criteria:

1. The fishery is conducted in a way that maintains natural functional relationships among species and should not lead to trophic cascades or ecosystem state changes.

[31] The sequence in which the Principles and Criteria appear does not represent a ranking of their significance, but is rather intended to provide a logical guide to certifiers when assessing a fishery. The criteria by which the MSC Principles will be implemented will be reviewed and revised as appropriate in light of relevant new information, technologies and additional consultations.

2. The fishery is conducted in a manner that does not threaten biological diversity at the genetic, species or population levels and avoids or minimises mortality of, or injuries to endangered, threatened or protected species.
3. Where exploited populations are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level within specified time frames, consistent with the precautionary approach and considering the ability of the population to produce long-term potential yields.

**Principle 3**

**The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.**

Intent:
The intent of this principle is to ensure that there is an institutional and operational framework for implementing Principles 1 and 2, appropriate to the size and scale of the fishery.

A. Management System Criteria:
1. The fishery shall not be conducted under a controversial unilateral exemption to an international agreement.
The management system shall:
2. Demonstrate clear long-term objectives consistent with MSC Principles and Criteria and contain a consultative process that is transparent and involves all interested and affected parties so as to consider all relevant information, including local knowledge. The impact of fishery management decisions on all those who depend on the fishery for their livelihoods, including, but not confined to subsistence, artisanal, and fishing-dependent communities shall be addressed as part of this process.
3. Be appropriate to the cultural context, scale and intensity of the fishery – reflecting specific objectives, incorporating operational criteria, containing procedures for implementation and a process for monitoring and evaluating performance and acting on findings.
4. Observe the legal and customary rights and long term interests of people dependent on fishing for food and livelihood, in a manner consistent with ecological sustainability.
5. Incorporates an appropriate mechanism for the resolution of disputes arising within the system[32].
6. Provide economic and social incentives that contribute to sustainable fishing and shall not operate with subsidies that contribute to unsustainable fishing.
7. Act in a timely and adaptive fashion on the basis of the best available information using a precautionary approach particularly when dealing with scientific uncertainty.
8. Incorporate a research plan – appropriate to the scale and intensity of the fishery – that addresses the information needs of management and provides for the dissemination of research results to all interested parties in a timely fashion.
9. Require that assessments of the biological status of the resource and impacts of the fishery have been and are periodically conducted.
10. Specify measures and strategies that demonstrably control the degree of exploitation of the resource, including, but not limited to:

[32] Outstanding disputes of substantial magnitude involving a significant number of interests will normally disqualify a fishery from certification.

a. setting catch levels that will maintain the target population and ecological community's high productivity relative to its potential productivity, and account for the non-target species (or size, age, sex) captured and landed in association with, or as a consequence of, fishing for target species;
b. identifying appropriate fishing methods that minimise adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas;
c. providing for the recovery and rebuilding of depleted fish populations to specified levels within specified time frames;
d. mechanisms in place to limit or close fisheries when designated catch limits are reached;
e. establishing no-take zones where appropriate.
11. Contains appropriate procedures for effective compliance, monitoring, control, surveillance and enforcement which ensure that established limits to exploitation are not exceeded and specifies corrective actions to be taken in the event that they are.

B. Operational Criteria
Fishing operation shall:
12. Make use of fishing gear and practices designed to avoid the capture of non-target species (and non-target size, age, and/or sex of the target species); minimise mortality of this catch where it cannot be avoided, and reduce discards of what cannot be released alive.
13. Implement appropriate fishing methods designed to minimise adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas.
14. Not use destructive fishing practices such as fishing with poisons or explosives;
15. Minimise operational waste such as lost fishing gear, oil spills, on-board spoilage of catch etc.
16. Be conducted in compliance with the fishery management system and all legal and administrative requirements.
17. Assist and co-operate with management authorities in the collection of catch, discard, and other information of importance to effective management of the resources and the fishery.

## 26. Conclusions and Recommendations

On the basis of the information reviewed by our professional assessment team, Global Trust would not recommend that the fishery proceed directly to full MSC assessment until areas where the fishery is short of meeting the Performance Indicators (PIs) have been addressed. Many of the PI's could not be scored effectively due to insufficient specific information on the stock biological reference points (BRPs), clear management objectives, and interactions of the fishery on ecosystem components. At present this fishery is undermanaged, in MSC terms, and the size of the stock resource is at a historical low. A defined stock building program is not established and the sustainability of the fishery would need to be addressed. As always, these comments are presented in terms of the requirement to ascertain the relative performance of the fishery according to MSC Principles and Criteria which demand the availability of very specific data for successful assessments.

- **Fishery within scope of the MSC program**

According to the information provided the fishery is within the full scope of the MSC scheme. There are enhancement activities utilized and but the fishery appears appropriate for assessment and within the scope of enhancement criteria for the MSC scheme.

- **Applicability of the default FAM assessment tree**

If the fishery progresses to full MSC assessment then the Default assessment tree should be replaced by a revised assessment tree modified by an expert qualified team and linked to the Risk Based Framework. The Risk Based Framework may be more appropriate for this fishery to score and evaluate Performance Indicators that are data deficient such as the lack of BRPs. This would require further consideration by an expert team on entering a full MSC assessment.

**PRINCIPLE 1 EVALUATION**

There is insufficient information to adequately score most of the performance indicators (PI's) under Principle 1 due to the absence of management elected BRPs or proxies for the stock. Most of Principle 1 PI's relate to the stock status and the appropriateness of the harvest strategy in relation to the stock as measured by such reference points through time (typically 3 to 5 years). The absence of BRPs makes it extremely difficult to demonstrate that the fishery is managed according to MSY or with a precautionary approach. While there are seasonal restrictions on fishing, there is no catch quota, and fishing on public grounds is open access. There are adequate annual stock assessments that summarize both landings and estimated stock size in terms of seed and sack or market size oysters, but these data have not been used to estimate exploitation rates/stock abundance, nor have the data been used to establish BRPs for fisheries management.

**PRINCIPLE 2 EVALUATION**

The greatest challenge to the Principal 2 assessment is caused by insufficient data in the format required for MSC purposes. Currently analyses of substantiated trip ticket data has not been made available and this data/information if made available may result in favourable scores for some of the PI's under Principle 2. For bycatch there is insufficient data on by-catch species by quantity and by gear type, and there are no regulations in place that manage these activities. However, anecdotal information suggests that this single target species fishery retains little bycatch of other organisms. Additional information on the incidental by-catch species types and their quantities for each gear type, as provided through observer programs for example, may provide substantiation for these PI's for scoring purposes. For ETP assessment, there would appear to be insufficient objective information available at this time for adequate evaluation of this PI. Therefore, it is likely that the fishery will have difficulty passing this PI. This fishery targets only the Oyster resource and is considered to have a low impact on bycatch species, with small amounts of blue crab and demersal finfish caught. There is no documented evidence, however, to substantiate these observations and a determination with regards to this PI cannot be made without this objective information. For Habitat and Ecosystem PI's, there are no recent data, analyses or reports available regarding the impact of the Louisiana oyster fishery on the habitat. The habitats fished (oyster bars/reefs) are highly diverse and are considered as high value ecosystems. Oyster fishing gear has an impact on these ecosystems not only by disturbing the substrate physically, but also by removing the natural shell material and the seed/market sized oysters. The loss of shell material reduces reef elevation and the overall quality of the reef system which may reduce stock abundance. Documented evidence to assess these activities and to assess the status of the reefs is not available to the assessment team at this time. Regulations are also not in place to manage the removal of cultch material from these systems.

There are also potential natural, anthropogenic and environmental effects on the fishery habitat that would need to be considered, e.g., oil spills, coastal degradation, hurricanes, and salinity fluctuations.

**PRINCIPLE 3 EVALUATION**

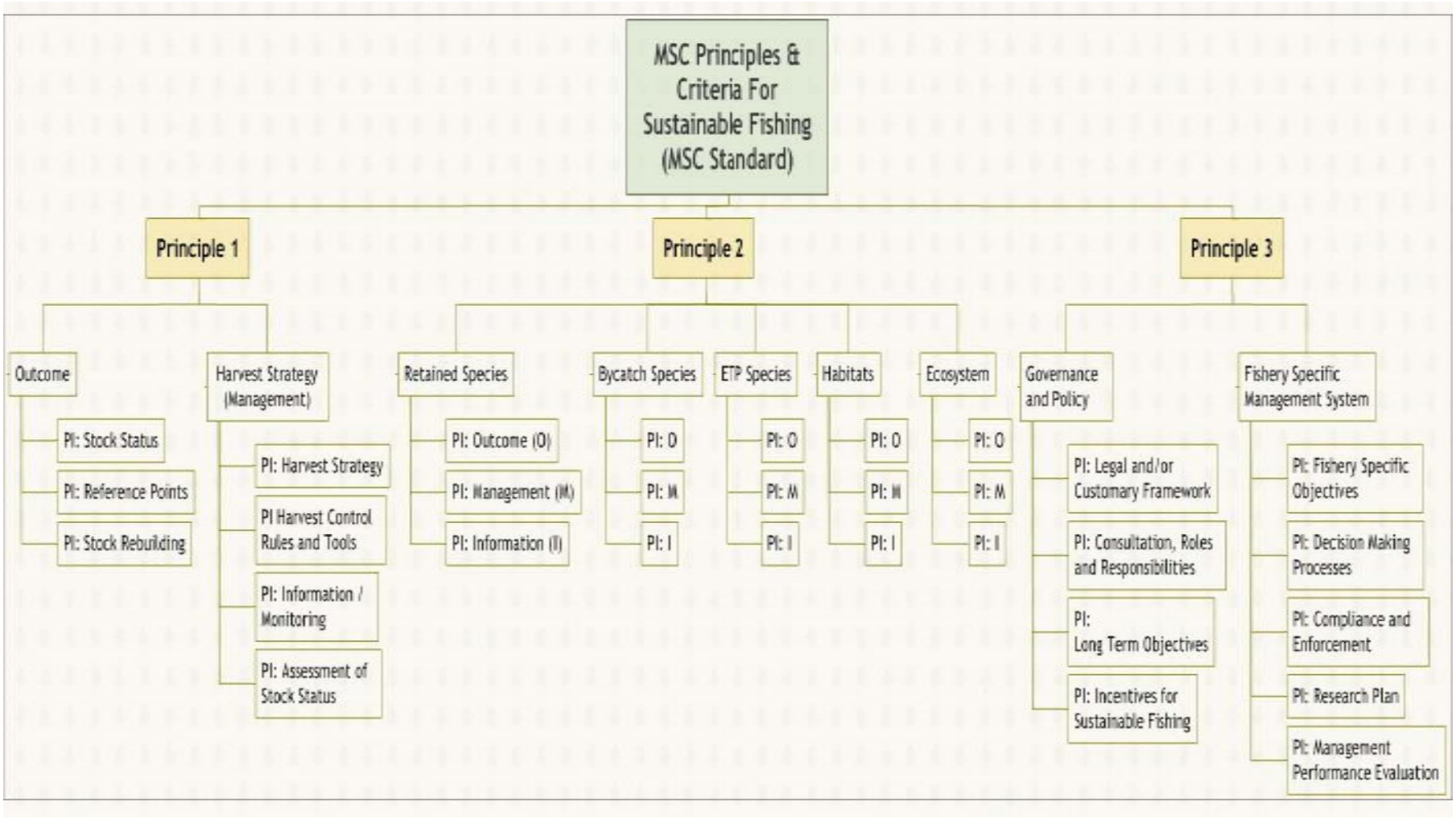
Principle 3's Performance Indicators (PI's) evaluate the management system of the fishery under the overall management framework of the oyster fishery under pre-assessment. The overall legal and government framework supporting the Louisiana fishery management system should be capable of delivering the requirements necessary to meet the PI's concerning the overall fishery management framework. However, there are potential challenges with regard to the MSC Principles and Criteria in that the system does not overtly appear to utilize the types of fish stock, habitat and ecosystem management approaches that are highly prescribed by the MSC assessment process. A specific fishery management plan for state waters does not appear to be available and clear long-term fishery management objectives have not been developed. The fishery is currently managed under indirect effort control measures such as season closure, private leases, carapace size limits, gear specifications, and the precautionary approach has not been implemented in current management plans. Also, the extent that relevant research, monitoring, evaluation and consultation occur to identify serious problems that the management and decision-making process should respond to is unclear.

However, Louisiana has a well developed and established system to collect annual data on the oyster resource and the status of the stock from landings is evaluated annually (2001 to 2010) using fishery dependent and independent data. Again, the source of this data - whether direct from Trip ticket data or NMFS commercial harvest data - would need to be standardized and substantiated to provide a more robust reliable reporting system. There is also an effective enforcement system in place for the fishery and there no signs of poor compliance with the existing regulatory system.

**Outcome and Recommendation**

Overall, the outcome of the pre-assessment would not suggest that the fishery as presented will readily meet the requirements for MSC full assessment. Therefore, the recommendation from Global Trust is not to proceed to full assessment until there is clarification on the information and data required and effective analysis provided for each of the PI's of the MSC scoring system. There are a number of obstacles in the management system and key information gaps that would create a substantial challenge for the fishery to meet the required minimum aggregate score of 80% for certification purposes. It should be clearly stated though that obstacles and challenges to the MSC full assessment does not mean the fishery is unsustainable. It simply means that information peculiar to the MSC program is currently not available to allow assessment of the fishery, according to the specific clauses and performance indicators contained within the MSC assessment methodology.

## ANNEX 1: MSC Default Assessment Tree



## ANNEX 2: Preliminary Evaluation Score Results

### Principle 1

| FAM Performance Indicator | Scoring issue # | Scoring Issue | Met? (Yes/No) | Notes |
|---|---|---|---|---|
| Principle 1 | A fishery must be conducted in a manner that does not lead to overfishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery. | | | |
| 1.1.1 Stock Status<br><br>The Stock is at a level which maintains high productivity and has a low probability of recruitment overfishing. | 60 | It is likely that *(>70% chance*) that the stock is above the point where recruitment would be impaired. | No | There does not appear to be any clearly stated harvest strategy. While there are seasonal restrictions on fishing, there is no catch quota, and fishing on public grounds is open access. There are annual stock assessments, based on considerable sampling effort, that summarize both landings and estimated stock size in terms of seed and sack or market size oysters, but there appears to be no attempt to actively manage or control harvesting if stock abundance is below the long term average. At the present time (2011) the results of the 2010 oyster stock assessment indicate that oyster abundance is well below its long term average, and this situation has existed for almost a decade. In fact oyster abundance is currently at less than half the long term average and almost at the lowest level in the record for the last 30 years. The 2010 stock assessment notes one coastal study area (CSA II) where landings of market size oysters exceeded the estimated stock size, indicating 100+% exploitation rate of the fishable biomass. |
| | 80.1 | It is highly likely *(>80% chance*) that the stock is above the point where recruitment would be impaired. | | |
| | 80.2 | The stock is at or fluctuating around its target reference point. | | |
| | 100.1 | There is a *high degree of certainty* that the stock is above the point where recruitment would be impaired. | | |
| | 100.2 | There is a *high degree of certainty* that the stock has been fluctuating around its target reference point, or | | |

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| | | has been above its target reference point, *over recent years.* | | |
| SUMMARY SCORE | <60<br>60-75<br>80-100 | Refer to FAM for guidance | <60 | Based on current information the fishery would be challenges at meeting the pass requirements for PI 1.1.1. The oyster resource stock size is below long term average and there appears to be an absence of measures such as limit effort or set low quotas, so as to preserve the resource from over-harvest and eventual recruitment failure and initiate a stock rebuilding program. |

| FAM Performance Indicator | Scoring issue# | Scoring Issue | Met? (Yes/No) | Notes |
|---|---|---|---|---|
| Principle 1 | A fishery must be conducted in a manner that does not lead to overfishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery. | | | |
| 1.1.2 Reference Points<br><br>Limit and Target Reference Points are appropriate for the stock. | 60 | *Generic* limit and target reference points are based on justifiable and reasonable practice appropriate for the species category. | | There are no BRPs established for this fishery as described in PI 1.1.1. |
| | 80.1 | Reference points are appropriate for the stock and can be estimated. | | |
| | 80.2 | The limit reference point is set above the level at which there is an appreciable risk of impairing Reproductive capacity. | | |
| | 80.3 | The target reference point is such that the stock is maintained at a level consistent with BMSY or some measure or surrogate with similar intent or Status. | | |
| | 80.4 | For low trophic level species, the target reference point takes into account the ecological role of the stock. | | |
| | 100.1 | Reference points are appropriate for the stock and can be estimated. | | |
| | 100.2 | The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity following consideration of relevant precautionary issues. | | |
| | 100.3 | The target reference point is such that the stock is maintained at a level consistent with BMSY or some ensure or surrogate with similar intent or Status, or a higher level, and takes into account relevant precautionary issues such as the ecological role of the stock with a high degree of certainty. | | |
| SUMMARY SCORE | <60<br>60-75<br>80-100 | Refer to FAM for guidance | <60 | The oyster resource stock size is below long term average and there appears to be an absence of measures such as limit effort or set low quotas, so as to preserve the resource from over-harvest and eventual recruitment failure and initiate a |

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| | | | | stock rebuilding program.<br><br>Therefore, based on information presented thus far, the fishery would be challenged in meeting the minimal 60% score for this PI. |

| FAM Performance Indicator | Scoring issue# | Scoring Issue | Met? (Yes/No) | Notes |
|---|---|---|---|---|
| Principle 1 | A fishery must be conducted in a manner that does not lead to overfishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery. | | | |
| PI 1.1.3 Stock Rebuilding<br><br>Where the stock is depleted, there is evidence of rebuilding. | 60.1 | Where stocks are depleted rebuilding strategies which have a reasonable expectation of success are in place. | | Stocks are described at low levels compared to long term average. Despite this low level, there appears to be no active management for reducing harvesting effort or restrict the fishery removals to allow rebuilding strategies. |
| | 60.2 | Monitoring is in place to determine whether they are effective in rebuilding the stock within a specified timeframe. | | |
| | 80.1 | Where stocks are depleted rebuilding strategies are in place. | | |
| | 80.2 | There is evidence that they are rebuilding stocks, or it is highly likely based on simulation modelling or previous performance that they will be able to rebuild the stock within a specified timeframe. | | |
| | 100 | Where stocks are depleted, strategies are demonstrated to be rebuilding stocks continuously and there is strong evidence that rebuilding will be complete within the shortest practicable timeframe. | | |
| SUMMARY SCORE | <60<br>60-75<br>80-100 | Refer to FAM for guidance | <60 | The oyster resource stock size is below long term average and there appears to be an absence of measures such as limit effort or set low quotas, so as to preserve the resource from over-harvest and eventual recruitment failure and initiate a stock rebuilding program.<br><br>Therefore, based on information presented thus far, the fishery would be challenged in meeting the minimal 60% score for this PI. |

| FAM Performance Indicator | Scoring issue# | Scoring Issue | Met? (Yes/No) | Notes |
|---|---|---|---|---|
| Principle 1 | A fishery must be conducted in a manner that does not lead to overfishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery. | | | |
| PI 1.2.1 Harvest Strategy<br><br>There is a robust and precautionary harvest strategy in place. | 60.1 | The harvest strategy is expected to achieve stock management objectives reflected in the target and limit reference points. | | There is no clearly stated harvest strategy in place. |
| | 60.2 | The harvest strategy is likely to work based on prior experience or plausible argument. | | |
| | 60.3 | Monitoring is in place that is expected to determine whether the harvest strategy is working. | | |
| | 80.1 | The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving management objectives reflected in the target and limit reference points. | | |
| | 80.2 | The harvest strategy may not have been fully tested but monitoring is in place and evidence exists that it is achieving its objectives. | | |
| | 100.1 | The harvest strategy is responsive to the state of the stock and is designed to achieve stock management objectives reflected in the target and limit reference points. | | |
| | 100.2 | The performance of the harvest strategy has been fully evaluated and evidence exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels. | | |
| | 100.3 | The harvest strategy is periodically reviewed and improved as necessary. | | |
| SUMMARY SCORE | <60<br>60-75<br>80-100 | Refer to FAM for guidance | <60 | The oyster resource stock size is below long term average and there appears to be an absence of measures such as limit effort or set low quotas, so as to preserve the resource from over-harvest and eventual recruitment failure and initiate a stock rebuilding program. |

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| | | | | Therefore, based on information presented thus far, the fishery would be challenged in meeting the minimal 60% score for this PI. |

| FAM Performance Indicator | Scoring issue# | Scoring Issue | Met? (Yes/No) | Notes |
|---|---|---|---|---|
| Principle 1 | A fishery must be conducted in a manner that does not lead to overfishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery. | | | |
| PI 1.2.2 Harvest Control Rules and Tools<br><br>There are well defined and effective harvest control rules in place | 60.1 | Generally understood harvest control rules are in place that are consistent with the harvest strategy and which act to reduce the exploitation rate as limit reference points are approached. | | While there are annual stock assessments with landing and estimates of seed and sack sized oyster abundance, these data have not been used to estimate exploitation rates, nor have the data been used to establish reference points for fisheries management, whereby estimated annual stock abundance and exploitations rates can be compared to pre-determined reference points for the effective management of the fishery following the precautionary approach. |
| | 60.2 | There is some evidence that tools used to implement harvest control rules are appropriate and effective in controlling exploitation. | | |
| | 80.1 | Well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached. | | |
| | 80.2 | The selection of the harvest control rules takes into account the main uncertainties. | | |
| | 80.3 | Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules. | | |
| | 100.1 | Well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached. | | |
| | 100.2 | The design of the harvest control rules take into account a wide range of uncertainties. | | |
| | 100.3 | Evidence clearly shows that the tools in use are | | |

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| | | effective in achieving the exploitation levels required under the harvest control Rules. | | |
| SUMMARY SCORE | <60<br>60-75<br>80-100 | Refer to FAM for guidance | <60 | With regard to this PI, the fishery will not pass as it is now. However, the existing data can be used to develop reference points and a control rule, and if the fishery management approach were changed to reflect a pre-cautionary approach, whereby there was a legislative and regulatory mandate to actively manage the fishery and rebuild the stock so as to ensure a healthy and sustainable population of oysters.<br><br>Therefore, based on information presented thus far, the fishery would be challenged in meeting the minimal 60% score for this PI. |

| FAM Performance Indicator | Scoring issue# | Scoring Issue | Met? (Yes/No) | Notes |
|---|---|---|---|---|
| Principle 1 | A fishery must be conducted in a manner that does not lead to overfishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery. | | | |
| PI 1.2.3 Information and Monitoring<br><br>Relevant information is collected to support the harvest strategy | 60.1 | Some relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy. | | Louisiana has a well developed system to collect information of the status of the oyster stock, and to monitor fishery landings. There are seven Coastal Study Areas, and within each area the status of the oyster resource is evaluated annually using well accepted fishery independent sampling procedures. Landings data is collect from a Trip Ticket system. The fishery independent survey data and fishery dependant landings data are summarized in the annual stock assessment. |
| | 60.2 | Stock abundance and fishery removals are monitored and at least one indicator is available and monitored with sufficient frequency to support the harvest control rule. | | |
| | 80.1 | Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy. | | |
| | 80.2 | Stock abundance and fishery removals are regularly monitored at a level of accuracy and coverage consistent with the harvest control rule, and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule. | | |
| | 80.3 | There is good information on all other fishery removals from the stock. | | |
| | 100.1 | A comprehensive range of information (on stock structure, stock productivity, fleet composition, stock abundance, fishery removals and other information such as environmental information), including some that may not be directly relevant to the current harvest strategy, is available. | | |
| | 100.2 | All information required by the harvest control rule is monitored with high frequency and a high degree of certainty, and there is a good understanding of the inherent uncertainties in the information [data] and the robustness of assessment and management to this uncertainty. | | |

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| SUMMARY SCORE | <60<br>60-75<br>80-100 | Refer to FAM for guidance | 80-100 | With regard to this PI, the fishery will pass, and a score of 80 or more is possible |

| FAM Performance Indicator | Scoring issue# | Scoring Issue | Met? (Yes/No) | Notes |
|---|---|---|---|---|
| Principle 1 | A fishery must be conducted in a manner that does not lead to overfishing or depletion of the exploited populations and, for those populations that are depleted the fishery must be conducted in a manner that demonstrably leads to their recovery. | | | |
| PI 1.2.4 Assessment of Stock Status<br><br>There is an adequate assessment of the stock status | 60.1 | The assessment estimates stock status relative to reference points. | | As noted previously, there is an excellent assessment of oyster stock abundance that is annually conducted and published by LDW&F. However, this is not placed in relation to BRPs which are not prescribed. |
| | 60.2 | The assessment identifies major sources of uncertainty… | | |
| | 80.1 | The assessment is appropriate for the stock and for the harvest control rule, and is evaluating stock status relative to reference points. | | |
| | 80.2 | The assessment takes uncertainty into account. | | |
| | 80.3 | The assessment of stock status is subject to peer review. | | |
| | 100.1 | The assessment is appropriate for the stock and for the harvest control rule, and takes into account the major features relevant to the biology of the species and the nature of the fishery. | | |
| | 100.2 | The assessment takes uncertainty into account and is evaluating stock status relative to reference points in a probabilistic way. | | |
| | 100.3 | The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored. | | |
| | 100.4 | The assessment has been externally and internally peer reviewed. | | |
| SUMMARY SCORE | <60<br>60-75<br>80-100 | Refer to FAM for guidance | 80-100 | With regard to this PI, the fishery will pass, and a score of 80 or more is possible. |

**Principle 2**

| Principle 2 | Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends. | | | | | |
|---|---|---|---|---|---|---|
| | Retained species | | | | | |
| 2.1.1 Status | The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species. | | | | | |
| 2.1.2 Management | There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species. | | | | | |
| 2.1.3 Information | Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species. | | | | | |
| FAM Performance Indicator | Estimated PI Score in range | | | Scoring Issues likely to | | Rationale for estimated scores (information and references) |
| Retained Species | <60 | 60-75 | >80 | Fail the Principle | Raise a condition | The Louisiana oyster fishery is a single target species fishery. Traditional harvesting gears, dredge, scrape and tongs, are used on oyster reefs. Based on this assessors experience (DeAlteris) with oyster fisheries and these gear types, there is likely little retained catch of other organisms other than some demersal finfish and blue crabs that may be taken and retained for personal consumption. This has been confirmed in a response to MSC follow-up questions; however the response also indicates that there is no data on the issue. Without some data based on either fishery observers or from fishery independent survey using the same gears in the same waters, we cannot make a final determination on this issue. |
| 2.1.1 Status | | | | 60-75 | | The fishery will probably achieve a pass with this PI once data is presented that can confirm our speculation. |
| 2.1.2 Management | | | | <60 | | There appears to be no regulations on the taking and retention of marine resources incidentally taken as part of the oyster fishery. But without data on incidental catch either retained or discarded, we cannot make a determination on this PI. |
| 2.1.3 Information | | | | <60 | | Again at present we have no data to be able to credibly assess this PI. |

| Principle 2 | Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends. | | | | | |
|---|---|---|---|---|---|---|
| | By-catch species | | | | | |
| 2.2.1 Status | The fishery does not pose a risk of serious or irreversible harm to the retained/ (bycatch) species and does not hinder recovery of depleted retained species. | | | | | |
| 2.2.2 Management | There is a strategy in place for managing retained/bycatch species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species. | | | | | |
| 2.2.3 Information | Information on the nature and extent of retained/ (bycatch) species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species. | | | | | |
| FAM Performance Indicator | Estimated PI Score in range | | | Scoring Issues likely to | | Rationale for estimated scores (information and references) |
| By-catch species | <60 | 60-75 | >80 | Fail the Principle | Raise a condition | The Louisiana oyster fishery is a single target species fishery. Traditional harvesting gears, dredge, scrape and tongs, are used on oyster reefs. Based on experience with oyster fisheries and these gear types, there is likely little bycatch of other organisms other than some demersal finfish and blue crabs that may be discarded. Without some data based on either fishery observers or from fishery independent survey using the same gears in the same waters, we cannot make a final determination on this issue. |
| 2.2.1 Status | | | | 60-75 | | The fishery will probably pass this PI once data is presented that can confirm our speculation. |
| 2.2.2 Management | | | | <60 | | There appears to be no regulations on the taking and retention of marine resources incidentally taken as part of the oyster fishery. But without data on incidental catch either retained or discarded, we cannot make a determination on this PI. |
| 2.2.3 Information | | | | <60 | | Again at present we have no data to be able to credibly assess this PI. |

| Principle 2 | Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends. | | | | | |
|---|---|---|---|---|---|---|
| | ETP Species | | | | | |
| 2.3.1 Status | The fishery meets national and international requirements for protection of ETP species. The fishery does not pose a risk of serious or irreversible harm to ETP species and does not hinder recovery of ETP species. | | | | | |
| 2.3.2 Management | The fishery has in place precautionary management strategies designed to: - meet national and international requirements; ensure the fishery does not pose a risk of serious or irreversible harm to ETP species; - ensure the fishery does not hinder recovery of ETP species;- and minimise mortality of ETP species. | | | | | |
| 2.3.3 Information | Relevant information is collected to support the management of fishery impacts on ETP species, including;- information for the development of the management strategy;- information to assess the effectiveness of the management strategy;- and information to determine the Status of ETP species | | | | | |
| FAM Performance Indicator | Estimated PI Score in range | | | Ration Scoring Issues likely to | | Rationale for estimated scores (information and references) |
| ETP Species | <60 | 60-75 | >80 | Fail the Principle | Raise a condition | The Louisiana oyster fishery is a single target species fishery. Traditional harvesting gears, dredge, scrape and tongs, are used on oyster reefs. Based on experience with oyster fisheries and these gear types, there is likely little bycatch of other organisms other than some demersal finfish and blue crabs that may be discarded. This has been confirmed in a response to MSC follow-up questions, however, the response also indicates that there is no data on issue. Without some data based on either fishery observers or from fishery independent survey using the same gears in the same waters, we cannot make a final determination on this issue. |
| 2.3.1 Status | | | | 60-75 | | The fishery will probably a pass this PI once data is presented that can confirm our speculation. |
| 2.3.2 Management | | | | <60 | | There appears to be no regulations on the taking and retention of marine resources incidentally taken as part of the oyster fishery. But without data on incidental catch either retained or discarded, we cannot make a determination on this PI. |
| 2.3.3 Information | | | | <60 | | Again at present we have no data to be able to credibly assess this PI |

| Principle 2 | Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends. | | | | | |
|---|---|---|---|---|---|---|
| | Habitat | | | | | |
| 2.4.1 Status | The fishery does not pose an irreversible harm to habitat structure, considered on a regional or bioregional basis, and function. | | | | | |
| 2.4.2 Management | There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types. | | | | | |
| 2.4.3 Information | Information is adequate to determine the risk posed to habitat types by the fishery and the effectiveness of the strategy to manage impacts on habitat types. | | | | | |
| FAM Performance Indicator | Estimated PI Score in range | | | Ration Scoring Issues likely to | | Rationale for estimated scores (information and references) |
| Habitat | <60 | 60-75 | >80 | Fail the Principle | Raise a condition | The oyster fishery of Louisiana is prosecuted on oyster reef or bars, and these are widely recognized to provide excellent habitat for a wide variety of estuarine species, and therefore have high ecosystem value. The harvesting oysters using tongs, scrape or dredge clearly disturbs the integrity of the oyster reef, especially the use of the towed gears. When oysters are harvested using these gears, the catch includes both seed and market sized oysters, and shell from the reef.<br>The harvesting and retention of oysters from the reef also result in a loss of shell material (cultch) from the reefs. The capacity for increased oyster production on Louisiana's public oyster seed grounds is largely dependent upon the amount of quality habitat available for larval oyster attachment and oyster spat growth. Hard, clean substrate is critical to developing a viable oyster reef and the (LDW&F) has been depositing cultch material (mainly native shell materials) on public oyster grounds to build and enhance reefs since 1919. Unfortunately, much of the oyster shell produced from in-state shucking operations is utilized for projects such as road base construction and poultry feed additive. In addition, a portion of the shell supply is lost when oysters are shipped out of state and a small amount is also lost to landfills. Therefore, Louisiana experiences a shell deficit as a far greater amount of shell is removed from public oyster grounds than is returned for habitat development and enhancement.<br>Louisiana laws that regulate oyster harvesting specify that any culling must be done on the reef presumably so as to return as much shell (cultch) and sub-legal oysters to the reef as possible. Oysters are sold by the harvester by the unit volume, so it is up to the buyer of the harvested oysters to determine the acceptable level of shell in the bag. Over the long term, excess removal of shell from the reef reduces the reef elevation and quality, especially if rising sea-level is considered. The 2010 oyster stock assessment reports percentages of shell cultch taken as part of the seed oyster stock harvested in CSA II as ranging from 1-50%, with an average of 18%. Many states manage their public reefs with a cull law that restricts the amount of shell and small oysters per unit volume of harvested oysters in an effort to preserve the reefs. These cull laws specify that not only must the culling be conducted on the reef at the time of harvest, but the oyster retained may not |

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| | | | | | | contain more than 5% of shell and sub-legal oysters by volume. |
| 2.4.1 Status | | | | <60 | | Habitat loss due to oyster fishing is potentially problematic in Louisiana and could be contributing to reduced stock abundance. The loss is due to both a lack of harvested shell stock being returned to the reefs, and due to excessive cultch removal in the harvesting process. Without more detailed information on this problem it will be difficult to credibly asses the status of the oyster fishery on this PI |
| 2.4.2 Management | | | | <60 | | There appear to be no regulations on the volume of shell or cultch taken as part of the oyster fishery, nor a requirement to return that the shell of shucked or processed oysters to the reefs. Without more detailed information on this problem it will be difficult to credibly asses the status of the oyster fishery on this PI. |
| 2.4.3 Information | | | | <60 | | Again at present we have no data to be able to credibly assess this PI |

| Principle 2 | Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends. | | | | | |
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| | Ecosystem | | | | | |
| 2.5.1 Status | The fishery does not pose a serious or irreversible harm to the key elements of ecosystem structure and function. | | | | | |
| 2.5.2 Management | There are measures to ensure that the fishery does not pose a risk of serious or irreversible harm to ecosystem structure and function. | | | | | |
| 2.5.3 Information | There is adequate knowledge of the impacts of the fishery on the ecosystem. | | | | | |
| FAM Performance Indicator | Estimated PI Score in range | | | Ration Scoring Issues likely to | | Rationale for estimated scores (information and references) |
| Ecosystem | <60 | 60-75 | >80 | Fail the Principle | Raise a condition | The ecosystem value of the Louisiana oyster reefs has already been noted in this pre-assessment and is clearly recognized by LDW&F in numerous reports over the years. The ecological health of oyster reefs and the live oyster they support as well as other species of estuarine organisms, are influenced by numerous climate or environmental factors and anthropogenic impacts, in addition to harvesting activity. The climatic or environmental factors include temperature, salinity, subsidence of the Mississippi delta, eustatic sea level rise; and the anthropogenic factors include oil development and the resulting oil spills, and the effects in water salinity and sediment input to the estuaries related to the initial development and more recent openings of the Mississippi River levees. But in this assessment we will consider only the ecosystem effects of the fishery, and these are primarily related to habitat issues that have been noted above, and will be repeated here. |
| 2.5.1 Status | | | | <60 | | The ecosystem effects of the fishery related to habitat loss is potentially problematic in Louisiana and could be contributing to reduced stock abundance. The loss is due to both a lack of harvested shell stock being returned to the reefs, and due to excessive cultch removal in the harvesting process. Without more detailed information on this problem it will be difficult to credibly assess the status of the oyster fishery on this PI. |
| 2.5.2 Management | | | | <60 | | There appear to be no regulations on the volume of shell or cultch taken as part of the oyster fishery, nor a requirement to return that the shell of shucked or processed oysters to the reefs. Without more detailed information on this problem it will be difficult to credibly asses the status of the oyster fishery on this PI. |
| 2.5.3 Information | | | | <60 | | Again at present we have no data to be able to credibly assess this PI. |

**Principle 3:**

| FAM Performance Indicator | Scoring issue # | Scoring Issue | Met? (Yes/No) | Notes |
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| Principle 3 | Governance and Policy | | | |
| PI 3.1.1 | The management system exists within an appropriate and effective legal and/or customary framework which ensure that it:<br>Is capable of delivering sustainable fisheries in accordance with MSC Principle 1 and 2<br>Observe the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood, and<br>Incorporates an appropriate dispute resolution framework | | | |
| Legal and customary framework | 60.1 | The management system is generally consistent with local, national or international laws or standards that are aimed at achieving sustainable fisheries in accordance with MSC Principles 1 and 2. | | The Louisiana fisheries management system operates under State authority in a mature democracy. It is highly governed by State law but appears to be generally consistent with national and international standards. The State supports the principles of the Magnuson-Stevens Fishery Conservation and Management Act in its enforcement and fisheries management activities[33] and apparently other federal management initiatives in the Gulf of Mexico.[34] The system does not appear to subject to continual legal disputes, and because entry to fishing generally is not restricted little need seems to exist for specific legal mechanisms to ensure protection of the right of any dependent people to fish for food or livelihood. Title 56 provides for a few appeal committees to deal with specific licensing decisions and a general provision for appeals to the Commission in cases where other appeals are unsatisfactory or where licence suspensions or similar sanctions are considered unfair or in error.<br><br>The overall legal and associated government framework supporting the Louisiana fishery management system should be capable of delivering sustainable fisheries, observing legal rights to fish of any dependent people and settling disputes as necessary. The shortcoming, in terms of MSC Principles and Criteria, is that the system does not overtly appear to utilize, or adhere to, the necessary modern fish stock, habitat and |

[33] LDW&F Strategic Plan 2010/12-2015/16; available at http://www.wlf.louisiana.gov/about-LDW&F.
[34] Except enforcement of the TED/BRD rules in State waters.

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| | | | | ecosystem management objectives, approaches and principles that are required to demonstrably prove that fish stocks and their habitat and ecosystems are being managed in a manner that maintains them at high productivity levels. The primary shortcoming of the system is that no overarching fishery conservation and management act exists that legislates explicit adoption of, and adherence to, clear and concrete sustainable fishing policies. |
| | 60.2 | The management system incorporates or is subject by law to a mechanism for the resolution of legal disputes arising within the system. | | |
| | 60.3 | Although the management authority or fishery may be subject to continuing court challenges, it is not indicating a disrespect or defiance of the law by repeatedly violating the same law or regulation necessary for the sustainability for the fishery. | | |
| | 60.4 | The management system has a mechanism to generally respect the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2. | | |
| | 80.1 | The management system is generally consistent with local, national or international laws or standards that are aimed at achieving sustainable fisheries in accordance with MSC Principles 1 and 2. | | |
| | 80.2 | The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes which is considered to be effective in dealing with most issues and that is appropriate to the context of the fishery. | | |
| | 80.3 | The management system or fishery is attempting to comply in a timely fashion with binding judicial decisions arising from any legal challenges. | | |
| | 80.4 | The management system has a mechanism to observe the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a | | |

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| | | manner consistent with the objectives of MSC Principles 1 and 2. | | |
| | 100.1 | The management system is generally consistent with local, national or international laws or standards that are aimed at achieving sustainable fisheries in accordance with MSC Principles 1 and 2. | | |
| | 100.2 | The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes that is appropriate to the context of the fishery and has been tested and proven to be effective. | | |
| | 100.3 | The management system or fishery acts proactively to avoid legal disputes or rapidly implements binding judicial decisions arising from legal challenges. | | |
| | 100.4 | The management system has a mechanism to formally commit to the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2. | | |
| SUMMARY SCORE | <60<br>60-75<br>80-100 | Refer to FAM for guidance | 60-75 | Therefore, this PI would, at the very best, warrant a conditional pass. The legislative framework is capable of delivering adequate statutes to support sustainable fishing but the evidence of the approaches that must be adopted to demonstrate sustainable fish stock, habitat and ecosystem management in order to fulfill MSC requirements were not available on initial review. |

| FAM Performance Indicator | Scoring issue # | Scoring Issue | Met? (Yes/No) | Notes |
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| Principle 3 | Governance and Policy | | | |
| PI 3.1.2 | The management system has effective consultation processes that are open to interested and affected parties.<br>The roles and responsibilities of organizations and individuals who are involved in the management process are clear and understood by all relevant parties. | | | |
| Consultation, roles and responsibilities | 60.1 | Organizations and individuals involved in the management process have been identified. Functions, roles and responsibilities are generally understood. | NO | While there is an eclectic list of defunct, semi-functioning While there is an extensive list of defunct, semi-functioning Task Forces and advisory committees among the various Gulf State fisheries (and now only one fully functioning Task Force), there clearly are a number of avenues through which industry input is possible, although this may not be actively sought. The meetings of the Commission are open to the public and allow for fishermen and others to present proposals or requests directly to the Commission. Several task forces and advisory councils are in place for specific species or fisheries. These include an emerging Shrimp and an active Oyster Task Force and Advisory Councils for Louisiana Alligator and Hunting and Fishing Education. Similar bodies did exist for other fisheries, such as Freshwater Recreational Fishing, but appear to have become inactive. These bodies usually consists of industry and government representatives and advise the Legislature, the Commission or the LDW&F on matters relating to the management, development and promotion of the fishery activity involved. The lack of formal time period fishery management plans and the heavily statute-based and static approach to management probably explains the widespread absence of functioning species/fisheries advisory committees that would regularly address fishery management issues and propose adjusted or new management measures.<br><br>The Louisiana Oyster Task Force was created by an act of the Legislature in 1988 to represent the broad interests of the state's oyster industry[35]. Specific responsibilities of the Task Force include marketing, presenting industry views in various legal and |
| | 60.2 | The management system includes consultation processes that obtain relevant information from the main affected parties, including local knowledge, to inform the management system. | | |

[35] http://louisianaoysters.org/mission.php

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| | | | | regulatory affairs, and administering the Oyster Development Fund that is generated from oyster tag revenues. Task Force members are selected by the various industry associations and agencies to represent specific geographic and business interests in the oyster industry. The Task Force is served administratively by the Executive Director of the Louisiana Seafood Promotion and Marketing Board, an employee of the LDW&F. This is more an industry development and promotion agency than one intended for fishery management advisory purposes.<br><br>The greatest overall obstacle to these consultative arrangements receiving a pass mark from a full assessment team is the lack of any overarching fisheries conservation and management statute that would require a cohesive approach to fishery management involving explicit adoption of, and adherence to, sustainable fishing policies and practices. Consequently, the State Legislature is not bound to base its decisions to introduce fishery management measures on the results of any formalized cohesive process that requires objective, professional and independent advice and information. |
| | 80.1 | Organizations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for key areas of responsibility and interaction. | | |
| | 80.2 | The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information obtained. | | |
| | 80.3 | The consultation process provides opportunity for all interested and affected parties to be involved. | | |
| | 100.1 | Organizations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for all areas of responsibility and interaction. | | |
| | 100.2 | The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system | | |

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| | | demonstrates consideration of the information and explains how it is used or not used. | | |
| | 100.3 | The consultation process provides opportunity and encouragement for all interested and affected parties to be involved, and facilitates their effective engagement. | | |
| SUMMARY SCORE | <60<br>60-75<br>80-100 | Refer to FAM for guidance | 60-75 | For all these reasons, this PI might warrant a conditional pass conditional pass. |

| FAM Performance Indicator | Scoring issue # | Scoring Issue | Met? (Yes/No) | Notes |
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| Principle 3 | Governance and Policy | | | |
| PI 3.1.3 | The management policy has clear long-term objectives to guide decision-making that are consistent with MSC Principles and Criteria, and incorporates the precautionary approach. | | | |
| | 60 | Long-term objectives to guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are implicit within management policy. | NO | No current statement of overall long-term objectives for the Louisiana fishery management system has been supplied to us. We were referred to the Louisiana Revised Statute Title 56 which contains several parts or sections that could be taken to establish a range of overall and long-terms objectives for management of fisheries. These include the following statement of objectives of 1978 in relation to seafood industries in the context of underutilized species:<br>"It is the policy and purpose of this Sub-part to provide every method of encouragement and assistance to the commercial fishermen of the state of Louisiana, to protect a culture and heritage that is unique to Louisiana, to prevent unemployment of Louisiana citizens, to assure adequate food for Louisiana citizens and to provide for economic stability in those areas of Louisiana so dependent on the seafood industry. To that end, the state shall foster and encourage its seafood industries." (56:571A).<br><br>Objectives which are guiding current oyster management decision-making consistent with MSC Principles for productive stock management (P1) and preservation of, or preventing irreversible damage to, fish habitat and ecosystems (P2) are not overtly apparent. The Precautionary Approach does not seem to have been adopted. A full assessment team may have difficulties in assigning a pass to these often conflicting objectives. |
| | 80 | Clear long-term objectives that guide decision-making, | | |

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| | | consistent with MSC Principles and Criteria and the precautionary approach are explicit within management policy. | | |
| | 100 | Clear long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are explicit within and required by management policy. | | |
| SUMMARY SCORE | <60<br>60-75<br>80-100 | Refer to FAM for guidance | <60 | This general lack of clearly stated relevant and operative objectives that would cause decision-making to be consistent with MSC Principles and the Precautionary Approach would cause a Fail on this PI unless the current approach of inactive or little management and the conclusion that the oyster resource is affected more by declining habitat and annual environmental conditions than by fishing can somehow be deemed cautious.<br><br>For all these reasons, and because proof that incentives to unsustainable fishing do not exist or is not available, this PI would have difficulty achieving a Pass mark in a full assessment. |

| FAM Performance Indicator | Scoring issue # | Scoring Issue | Met? (Yes/No) | Notes |
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| Principle 3 | Governance and Policy | | | |
| PI 3.1.4 | The management system provides economic and social incentives for sustainable fishing and does not operate with subsidies that contribute to unsustainable fishing. | | | |
| | 60 | The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2. | NO | While we are advised that no direct financial incentives or subsidies in the Louisiana fishery would contribute to unsustainable fishing exist, the general management approach and philosophy could provide the basis for such an outcome. Evidence is generally not available to indicate whether or not the current laissez-faire fishery management system has caused or prevented unsustainable fishing. The apparent high natural productivity of State waters appears to be one rationale for a general lack of direct input or effort controls as well as an almost total absence of direct output controls.<br><br>Except for oyster leases, the fishery management system does not use limited entry licensing, vessel capacity limits or direct catch controls in almost all cases. Instead, it relies on a variety of indirect effort control measures such as seasons, fish size limits, daily catch and/or possession limits, gear specifications and limits, licensing fees and, in some instances, market demand. A number of past attempts to introduce limited entry licensing all failed. A moratorium on new specific gear licences, such as in the case of crab, is the most that can be achieved. The prevailing fishery management philosophy is that these direct input or output control measures are not acceptable, not necessary because the environment is so productive or market demand is below resource availability or that fisheries have lasted for more than a hundred years or more anyway. One key missing ingredient appears to be that sufficient information has been gathered, but it |

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| | | | | may not be sufficiently analysed to determine if this general assessment is correct. Also, there is no indication that the management system seeks to ensure that negative incentives do not develop. |
| | 80 | The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2, and seeks to ensure that negative incentives do not arise. | | |
| | 100 | The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2, and explicitly considers incentives in a regular review of management policy or procedures to ensure that they do not contribute to unsustainable fishing practices. | | |
| SUMMARY SCORE | <60<br>60-75<br>80-100 | Refer to FAM for guidance | <60 | Therefore, based on information presented thus far, the fishery would be challenged in meeting the minimal 60% score for this PI. |

| FAM Performance Indicator | Scoring issue # | Scoring Issue | Met? (Yes/No) | Notes |
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| Principle 3 | Fishery Specific Management &System | | | |
| PI 3.2.1 | The fishery has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2. | | | |
| | 60 | Objectives, which are broadly consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are implicit within the fishery's management system. | | We have been informed that no statements of fishery management objectives been developed and officially adopted for the Louisiana oyster industry. There would seem to be an implicit objective of managing the state's oyster resources in a manner that permits maximum production over time. This would be the most likely rationale for managing this fishery by a combination of seasons, gear specifications, carapace size and private leases. |
| | 80 | Short and long term objectives, which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery's management system. | | |
| | 100 | Well defined and measurable short and long term objectives, which are demonstrably consistent with achieving the outcomes expressed by MSC's Principles 1 and 2 are explicit within the fishery's management system | | |
| SUMMARY SCORE | <60<br>60-75<br>80-100 | Refer to FAM for guidance | <60 | This falls short of the MSC pass requirements that the fishery specific objectives be clear, include the short and long-term, be consistent with achieving the outcomes expressed by P1 and P2 and that they be explicit in the management system.<br><br>The fishery would be challenged at meeting the requirements for a pass mark. |

| FAM Performance Indicator | Scoring issue # | Scoring Issue | Met? (Yes/No) | Notes |
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| Principle 3 | Fishery Specific Management &System | | | |
| PI 3.2.2 | The fishery-specific management system includes effective decision- making processes that result in measures and strategies to achieve the objectives. | | | |
| | 60.1 | There are informal decision-making processes that result in measures and strategies to achieve the fishery- specific objectives. | | The decision making process for management of oysters in Louisiana largely mirrors the structure of the overall fishery management system as outlined in PI 3.1.1 “The Legal and Customary Framework”. The State Legislature is the supreme decision maker, retaining to itself the powers to decide management programs and policies, the types of permitted fishing gear and placing certain bounds on what LDW&F or the Commission may do.<br><br>The LDW&F was created by the State Legislature to be the operational agency that manages fisheries and wildlife in Louisiana. It can provide advice to the Legislature on policy and programs. The Commission is a policy decision-making body that considers, adopts or rejects recommendations from the LDW&F on such matters as season times, closures, fishing rules etc. It also will consider representations made to it by fishermen or other interested parties and may decide on management actions that are within the powers entrusted to it by the Legislature.<br>While it may appear complex at first glance the Louisiana fisheries management decision-making processes appear to be well understood (and used) by those involved. Industry reportedly first lobbies the LDW&F in respect of a problem, issue or proposal. If they are unsuccessful in getting a favourable decision, they then may make their case to the Commission. If unsuccessful there, their final recourse is to lobby the Legislature to have their issue dealt with through statute change or resolution. There are apparently |

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| | | | | cases when this approach has resulted in changes being achieved at the higher level of authority, e.g., TED[36] and BRD[37] non-enforcement, crawfish trap mesh size, etc.<br><br>However, in the case of the Oyster fishery there are no official statements of short and long-term fishery management objectives that this decision-making process is seeking to achieve, save the probably implicit one of maximizing production over time. There is, moreover, no indication that the precautionary approach is employed, or that the best information is made available for use in management decisions. It also is unclear as to the extent that relevant research, monitoring, evaluation and consultation occurs to identify serious problems that the decision-making process should respond to. Indeed, the supremacy of the State Legislature, as exercised to date, would appear to be an impediment to decision-making that would utilize precautionary approaches with pre-determined harvest rules. |
| | 60.2 | Decision-making processes respond to serious issues identified n relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take some account of the wider implications of decisions. | | |
| | 80.1 | There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives. | | |
| | 80.2 | Decision-making respond to serious and other important issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions. | | |

[36] L.R.S Title 56, 57.2
[37] Ibid, 57.4

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| | 80.3 | Decision-making processes use the precautionary approach and are based on best available information. | | |
| | 80.4 | Explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity. | | |
| | 100.1 | There are established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives. | | |
| | 100.2 | Decision-making processes respond to all issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions. | | |
| | 100.3 | Decision-making processes use the precautionary approach and are based on best available information. | | |
| | 100.4 | Formal reporting to all interested stakeholders describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity. | | |
| SUMMARY SCORE | <60<br>60-75<br>80-100 | Refer to FAM for guidance | <60 | Therefore, based on information presented thus far, the fishery would be challenged in meeting the minimal 60% score for this PI. |

| FAM Performance Indicator | Scoring issue # | Scoring Issue | Met? (Yes/No) | Notes |
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| Principle 3 | Fishery Specific Management &System | | | |
| PI 3.2.3 | Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with. | | | |
| Compliance and enforcement | 60.1 | Monitoring, control and surveillance mechanisms exist and are implemented in the fishery under assessment and there is a reasonable expectation that they are effective. | | The specialized enforcement capability that exists in LDW&F appears to be well qualified, trained and organized.[38] Managers appear satisfied with the results achieved in enforcement of fisheries management measures. There is apparently an internal consultative arrangement whereby Enforcement will re-deploy staff to meet specific fishery management requirements, for example, near opening and closing times for major fisheries. The escalating system of penalties for fishing infractions appears to be considered an effective deterrent in reducing repeat violations. This involves classification of offences into Classes One to Eight that have increasing levels of penalties prescribed. Within each class the penalties increase with each offence. There are also a variety of licence suspensions provisions contained in title 56.<br><br>The responsibility for monitoring and enforcement of the health-related rules and regulations governing water quality, harvest methods, refrigeration, transportation, processing and packing rests with both the Louisiana Department of Health and Hospitals (LDHH) and LDW&F Enforcement Division. The primary responsibility of LDW&F Enforcement is to patrol oyster growing areas. When waters are closed to harvest due to unacceptable levels of pollution or due to natural events such as toxic algae blooms, it is |

[38] See pp 7-9 of LDW&F Annual Report 2008/09 at http://www.wlf.louisiana.gov/sites/default/files/pdf/publication/33565-2008-09-annual-report/08-09annualreport.pdf

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| | | | | LDW&F's responsibility to enforce the closure.<br><br>Wildlife agents patrolling oyster waters must also see that many other regulations pertaining to oysters are enforced. These regulations include tagging requirements, refrigeration, size restrictions, harvest hours, required licenses and gear regulations. In addition to these regulations, wildlife agents must protect oysters from theft. Much of Louisiana's prime oyster growing waters are under lease to oyster farmers who invest significantly in this oyster crop through seeding and overall management. Theft from private leases and from public seeding grounds can have detrimental effects on the industry.<br><br>The wildlife agents within the LDW&F Enforcement Division who are primarily responsible for enforcement of oyster regulations are the members of the Oyster Strike Force (OSF).[39] This small unit is made up of agents from the coastal areas of the state who concentrate their enforcement efforts in the state's prime oyster growing waters. The OSF is funded in part by oyster harvester license fees collected by the department.<br><br>While data results of enforcement activities were not obtained, such statistics are available. A general summary of 2009 enforcement operation is available in the Department's annual Report for 2008/09.[40] The view expressed by all mangers during the Site Visit was that there is no systematic non-compliance. |
| | 60.2 | Sanctions to deal with non-compliance exist and there is some evidence that they are applied. | | |

[39] http://www.wlf.louisiana.gov/oyster-strike-force
[40] http://www.wlf.louisiana.gov/publications

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| | 60.3 | Fisheries are generally thought to comply with the management system for the fishery under assessment, including, when required, providing information of importance to the effective management of the fishery. | | |
| | 80.1 | A monitoring, control and surveillance system has been implemented in the fishery under assessment and has demonstrated an ability to enforce relevant management measures, strategies and/or rules. | | |
| | 80.2 | Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence. | | |
| | 80.3 | Some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery. | | |
| | 80.4 | There is no evidence of systematic non-compliance. | | |
| | 100.1 | A comprehensive monitoring, control and surveillance system has been implemented in the fishery under assessment and has demonstrated an ability to enforce relevant management measures, strategies and/or rules. | | |
| | 100.2 | Sanctions to deal with non-compliance exist, are consistently applied and demonstrably provide effective deterrence. | | |
| | 100.3 | There is a high degree of confidence that fishers comply with the management system under assessment, including, providing information of importance to the effective management of the fishery. | | |
| | 100.4 | There is no evidence of systematic non-compliance | | |
| SUMMARY SCORE | <60<br>60-75<br>80-100 | Refer to FAM for guidance | 80-100 | This PI would warrant a pass, as the compliance and enforcement provisions appear to be such that relevant measures are being enforced, sanctions exist and are applied and there is no reported evidence of |

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| | | | | harvesters not generally complying with the management system including the provision for information reporting |

| FAM Performance Indicator | Scoring issue # | Scoring Issue | Met? (Yes/No) | Notes |
|---|---|---|---|---|
| Principle 3 | Fishery Specific Management &System | | | |
| PI 3.2.4 | The fishery has a research plan that addresses the information needs of management. | | | |
| Research Plan | 60.1 | Research is undertaken, as required, to achieve the objectives consistent with MSC's Principles 1 and 2. | | Overall, there seems to be a considerable amount and variety of data being collected while various fisheries are underway, but a good deal of it is not analyzed to inform or evaluate management decisions or changes. Fisheries under quota, or for which stock assessments are conducted, such as oyster, seem to have more organized forms of regular data collection covering such things as effort/participation, sampling of biological characteristics, hydrological details and catch levels. The Trip Ticket system appears to be a good source of data for many analytical purposes that are still being identified and/or discovered. It is used to monitored catch quotas in the few fisheries that have these.<br>Louisiana has a well developed system to collect information of the status of the oyster stock, and to monitor landings from the fishery. The status of the oyster resource is evaluated annually in each of seven Coastal Study Areas using well accepted fishery independent sampling procedures. Landings data is collect from a Trip Ticket system. The fishery independent survey data and fishery dependant landings data are summarized in the annual stock assessment report which is available to the public.<br>Beyond that there is no indication that the type of research plan required under PI 3.2.4 exists for the oyster fishery. The primary purpose of the oyster stock assessment seems to be forecasting the likely abundance in the upcoming season. No TAC or related calculations are attempted; the oyster season is opened on a size prediction and closed when the catch per day drops below a pre-set level. However, attempting to achieve objectives consistent with MSC Principles 1 and 2 cannot be claimed to exist. |
| | 60.2 | Research results are available to all interested parties. | | |

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| | 80.1 | A research plan provides the management system with a strategic approach to research and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2. | | |
| | 80.2 | Research results are disseminated to all interested parties in a timely fashion. | | |
| | 100.1 | A comprehensive research plan provides the management system with a coherent and strategic approach to research across P1, P2 and P3, and reliable and timely information sufficient to achieve the objectives consistent with MSC's Principles 1 and 2. | | |
| | 100.2 | Research plan and results are disseminated to all interested parties in a timely fashion and are widely and publicly available. | | |
| SUMMARY SCORE | <60<br>60-75<br>80-100 | Refer to FAM for guidance | 60-75 | Overall, this PI might warrant a conditional Pass in a full assessment if adequate P.1 and P.2 objectives were clearly adopted. |

| FAM Performance Indicator | Scoring issue # | Scoring Issue | Met? (Yes/No) | Notes |
|---|---|---|---|---|
| Principle 3 | Fishery Specific Management &System | | | |
| PI 3.2.5 | There is a system for monitoring and evaluating the performance of the fishery-specific management system against its objectives. There is effective and timely review of the fishery-specific management. | | | |
| Monitoring Management Performance Evaluation | 60 | The fishery has in place mechanisms to evaluate some parts of the management system and is subject to occasional internal review. | | Other than the attention the Oyster Task Force may give to evaluating management of the oyster fishery (and no indication of that has been presented) the management system for this fishery does not undergo any regular evaluation or review of any elements. As mentioned above, there are no real stated objectives for oyster management that the approach can be judged against. A static approach to oyster management prevails that appears to be justified on the basis that the fishery has survived for over 100 years or more.<br>No formal fisheries management plan for Louisiana oysters exists. The Gulf States Marine Fisheries Commission (GSMFC) prepared a Regional Management Plan[41] for oysters in 1991 that is an extensive biological, historical, regulatory, economic, sociological and fish management overview of the oyster industry in the different Gulf States. It identifies an array of inter- and intra- state management issues and contains non-binding recommendations for consideration of the individual states. There is no information on the extent to which any of these recommendations have been acted on by individual states. This 20 year-old document is currently being updated by GSMFC. It appears to be more a source of useful information than what is normally considered a fishery management plan, especially in the context of MSC Principles and Criteria. |
| | 80 | The fishery has in place mechanisms to evaluate all parts of | | |

[41] http://www.gsmfc.org/publications/GSMFC%20Number%20024.pdf

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| | | the management system and is subject to regular internal and external review. | | |
| | 100 | The fishery has in place mechanisms to evaluate all parts of the management system and is subject to regular internal and external review. | | |
| SUMMARY SCORE | <60<br>60-75<br>80-100 | Refer to FAM for guidance | 60-75 | There is no basis on which to give this PI a passing grade in the context that MSC requires. It might be possible to allow that SG 60 applies in that the Oyster Task Force exists and may occasionally scrutinize the management approach used for this fishery, but that is speculative. |